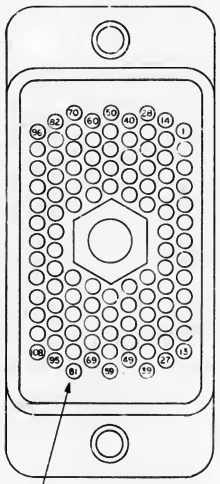
REVISIONS 03053			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 07347 DR & Simon CHK Cuk	6 Nov 69	Hue



96	
97	
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107	
108	

SEE NOTE 2

82	330
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	

CABLE GROUP II SHIELDED

70	211	60	216	50	NOT AV.	40	229	28	217	14	224
71	212	61	221	51	237	41	230	29	218	15	225
72	213	62	222	52	NOT AV.	42	244	30	219	16	226
73	214	63	223	53	236	43	235	31	220	17	227
74	215	64	238	54	NOT AV.	44	234	32	232	18	228
75	247							33	233	19	231
										20	242
										21	307
										22	308
										23	309
										24	310
										25	311
										26	312
										27	250

76	
77	
78	
79	
80	
81	

65	316
66	317
67	331
68	
69	

CABLE GROUP I
NOT SHIELDED

55	240
56	239
57	241
58	251
59	243

45	248	34	201
46	249	35	202
47	210	36	203
48	208	37	204
49	209	38	205
		39	207

CABLE GROUP III
SHIELDED BUT
NOT GROUNDED

SEE NOTE 4

SEE NOTE 3

1	245
2	328
3	301
4	302
5	303
6	304
7	305
8	306
9	326
10	327
11	313
12	314
13	315

CABLE GROUP IV
NOT SHIELDED

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL CABLE GROUP II AND III SIGNAL RETURN WIRES WILL BE COMMONED ON J BOX HARNESS AND BROUGHT THRU ON PIN 82
3. THE SHIELD FOR CABLE GROUP II IS CONNECTED TO PIN NO 1
4. THE SHIELD FOR CABLE GROUP III IS TIED TO PIN 27
5. FIGURE DENOTES THE CONTACT SIDE OF THE MALE CONNECTOR ATTACHED TO THE DSK WITH MALE PINS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FINO NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS.
DWG NO CONTRACT

DRAWN D. Hargrave DATE 9-25-68
CHECKED
APPROVAL W.D. Sykes Nov 69
APPROVAL E.A. Laning 6 Nov 69
NASA APPROVAL Bill Tschudy 6 Nov 69
MIT APPROVAL C. Hoag 6 Nov 69

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

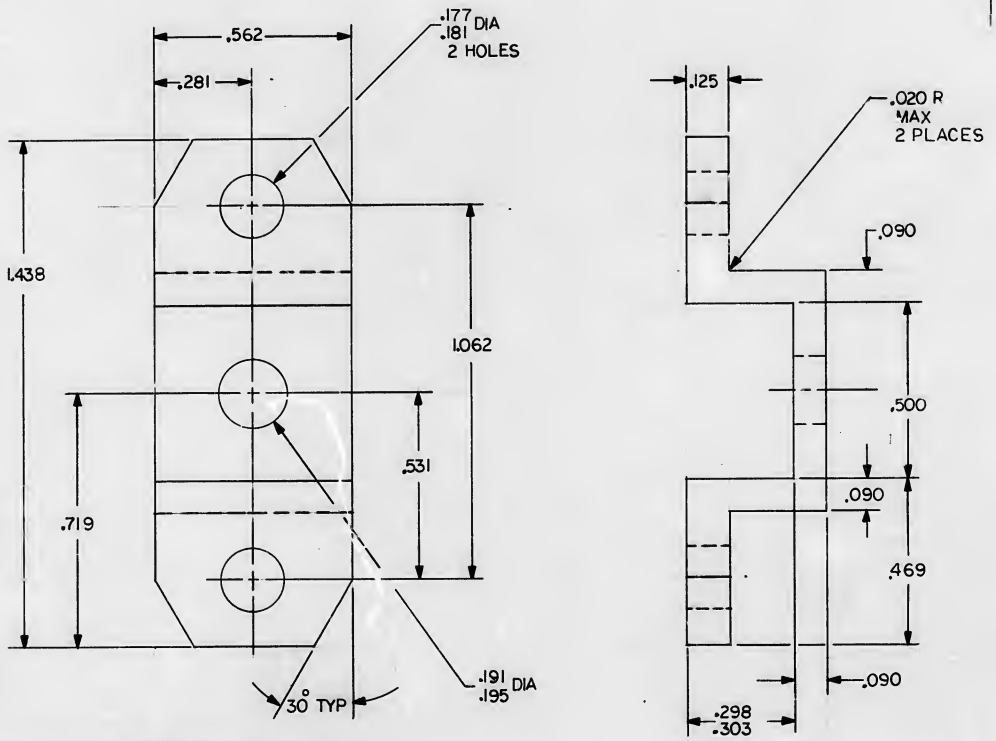
SIGNAL PIN ASSIGNMENT
05A6P1 CONNECTOR
NAV PANEL DSKY

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	D	1004252

SCALE NONE WT — SHEET 1 OF 1

B 1004254

REVISIONS 03/37			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05639	1/8/64	
B	REVISED PER TDRR 05795	2/20/64	



NOTES:—

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL 416 CRES PER QQ-S-763 CLASS 416 COND A
3. FINISH: PAINT WITH 101C729-2 LIGHT GREY EPOXY RESIN ENAMEL PER ND
4. 125/FINISH ALL OVER
5. REMOVE BURRS AND BREAK SHARP EDGES .005 .015

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± .005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 2
HEAT TREATMENT: R_C37 TO R_C40
FINAL FINISH: SEE NOTE 3

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN L.W.S. Hawk DATE 6-9-63
CHECKED R. Piasecki
APPROVAL W.D. Talmer NOSEPGS
APPROVAL S. Dupuy
NASA APPROVAL 9/10/63
MIT APPROVAL W. Kupfer 12/19/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

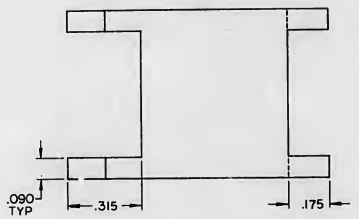
RETAINER, JACK SCREW

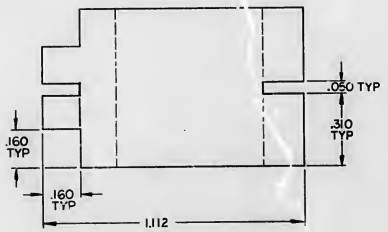
CODE IDENT NO.	SIZE	NAS. DRAWING NO.
	C	1004254
SCALE 4/1	WT	SHEET 1 OF 1

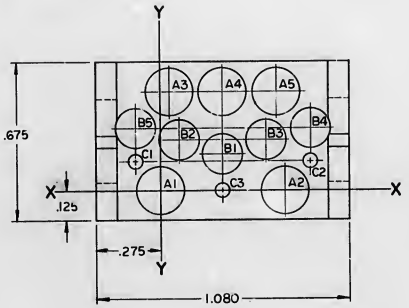
MASTER

REVISIONS 04147			
SYM	DESCRIPTION	DATE	APPROVAL

HOLE IDENT	BASIC X DIM.	BASIC Y DIM.	HOLE DIA	⊕ DIA	QTY
A1	.000	.000	.202 .206	.006	5
A2	.530	.000			
A3	.040	.420			
A4	.265	.420			
A5	.495	.420			
B1	.265	.155	.168 .172	.006	5
B2	.080	.215			
B3	.450	.215			
B4	.640	.265			
B5	-.105	.265			
C1	-.105	.125	.058 .062	.006	3
C2	.640	.125			
C3	.265	.000			







NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: MAGNESIUM ALLOY, ZK-60A-T5 PER QQ-M-31
3. TRUE POSITION AS SHOWN IN CHART
4. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/.015
5. FINISH: ANODIZE PER MIL-M-3171 TYPE IV
6. 125/ ALL OVER
7. ALL FILLETS AND RADII .005/.020

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1003162	
1003171	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH SEE NOTE 5

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.
DWG NO. CONTRACT
DRAWN C.A. Butler DATE 8-27-63
CHECKED [illegible] 11 Sept 63
APPROVAL [illegible] 11 Sept 63
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

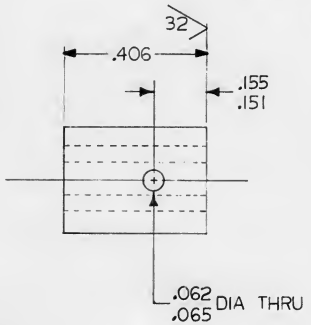
HOLDER, COMPONENT
STRAND GATE MODULE

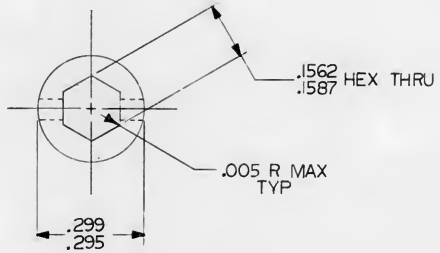
CODE IDENT NO | SIZE D | NASA DRAWING NO. 1004255
SCALE 4/1 | WT | SHEET 1 OF 1

1004255

1004256

REVISIONS: 03/39			
SYM	DESCRIPTION	DATE	APPROVAL





NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: 416 CRES PER QQ-S-763 CONDITION A
3. HEAT TREAT TO ROCKWELL C35-C40
4. SURFACE QUALITY: 125 UNLESS OTHERWISE SPECIFIED
5. REMOVE ALL BURRS AND SHARP EDGES .005/.015
6. FINISH: PASSIVATE PER MIL-F-14072 E 300

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±,005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT SEE NOTE 3
FINAL FINISH SEE NOTE 6

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN M Heaton DATE 8-22-63
CHECKED [illegible] 10 Sep 63
APPROVAL W D Curtiss 10 SEP 63
APPROVAL [illegible]
NASA APPROVAL [illegible] 9/12/63
MIT APPROVAL [illegible] 12 Sep 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRIVE CYLINDER, EJECTION SCREW

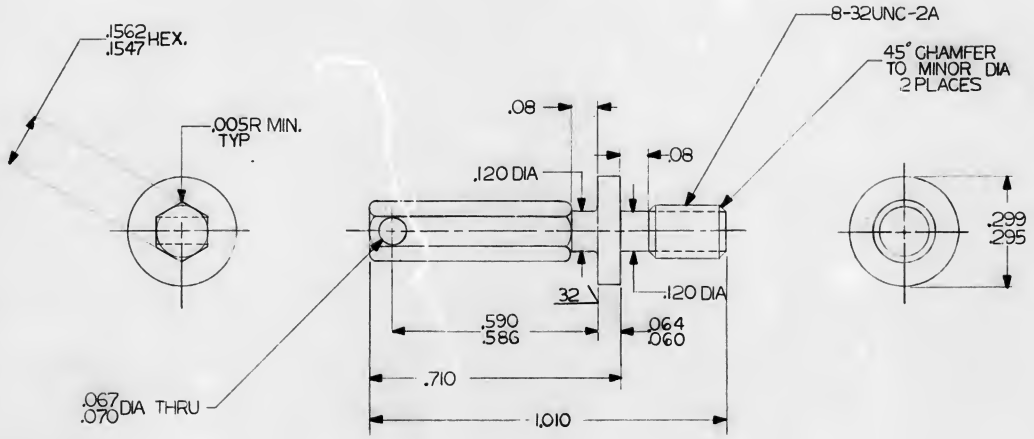
CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004256
SCALE 4/1	WT	SHEET 1 OF 1

MASTER

1004256

1004257

REVISIONS 03/39			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: 416CRES PER QQ-S-763 CONDITION A
3. HEAT TREAT TO ROCKWELL G35-C40
4. SURFACE QUALITY 125 EXCEPT WHERE OTHERWISE SPECIFIED
5. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/.015
6. FINISH: PASSIVATE PER MIL-F-14072 E300
7. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII TO BE .01 OR MAX

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± | DECIMALS XXX±.005 XX±.02 | ANGLES ±5°
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 2
HEAT TREATMENT: SEE NOTE 3
FINAL FINISH: SEE NOTE 6

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG NO. | CONTRACT

DRAWN D. Glock DATE 8/27/63
CHECKED
APPROVAL 10 SEP 63
APPROVAL
NASA APPROVAL 9/12/63
MIT APPROVAL 10 Sep 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCREW, EJECTION

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004257

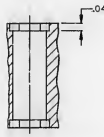
SCALE 4/1 | WT | SHEET 1 OF 1

MASTER

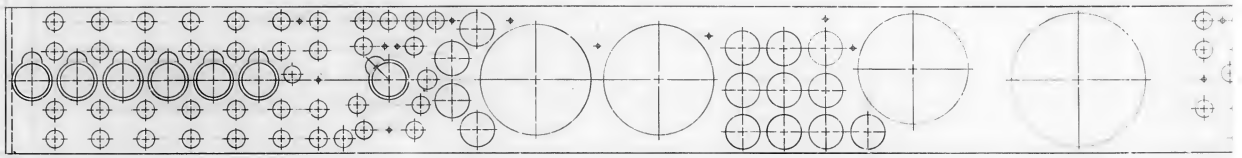
1004257

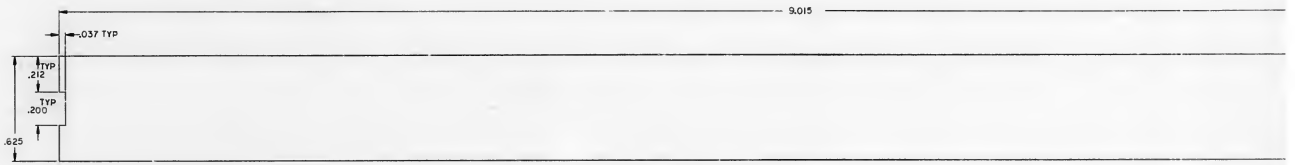
HOLE IDENT	BASIC X DIM.	BASIC Y DIM.	HOLE DIA	⌖ .01 A	QTY
A1	.135	-.350			
A2	.135	-.175			
A3	.135	.350			
A4	.135	.175			
A5	.405	-.350			
A6	.405	-.175			
A7	.405	.350			
A8	.405	.175			
A9	.675	-.350			
A10	.675	-.175			
A11	.675	.350			
A12	.675	.175			
A13	.945	-.350			
A14	.945	-.175			
A15	.945	.350			
A16	.945	.175			
A17	1.215	-.350			
A18	1.215	-.175			
A19	1.215	.350			
A20	1.215	.175			
A21	1.485	-.350			
A22	1.485	-.175			
A23	1.485	.350			
A24	1.485	.175			
A25	7.215	-.350			
A26	7.215	-.175			
A27	7.215	.175			
A28	7.215	.350			
A29	7.485	-.350			
A30	7.485	-.175			
A31	7.485	.175			
A32	7.485	.350			
A33	7.755	-.350	.100 .104	.005	68
A34	7.755	-.175			
A35	7.755	.175			
A36	7.755	.350			
A37	8.025	-.350			
A38	8.025	-.175			
A39	8.025	.175			
A40	8.025	.350			
A41	8.295	-.350			
A42	8.295	-.175			
A43	8.295	.175			
A44	8.295	.350			
A45	8.565	-.350			
A46	8.565	-.175			
A47	8.565	.175			
A48	8.565	.350			
A49	1.705	.175			
A50	1.705	-.175			
A51	1.705	-.350			
A52	6.995	-.175			
A53	6.995	-.350			
A54	1.550	-.035			
A55	7.150	-.035			
A56	2.315	.150			
A57	2.125	-.350			
A58	2.275	-.350			
A59	2.405	-.350			
A60	2.275	-.200			
A61	2.275	.300			
A62	1.975	-.350			
A63	1.975	-.200			
A64	1.935	.150			
A65	1.975	.300			
A66	6.995	.175			
A67	1.705	.350			
A68	1.885	.350			
B1	2.650	.300			
B2	2.500	-.125			
B3	2.500	+.125			
B4	2.650	-.300			
B5	4.235	.310			
B6	4.485	.310			
B7	4.235	.060	.202 .206	.005	14
B8	4.485	.060			
B9	4.235	-.190			
B10	4.485	-.190			
B11	4.735	.310			
B12	4.985	.310			
B13	4.735	.060			
B14	4.735	-.190			
C1	.000	.000			
C2	.270	.000			
C3	.540	.000			
C4	.810	.000			
C5	1.080	.000			
C6	1.350	.000	SEE DETAIL A	.005	13
C7	7.350	.000			
C8	7.620	.000			
C9	7.890	.000			
C10	8.160	.000			
C11	8.430	.000			
C12	8.700	.000			
C13	2.125	.000			

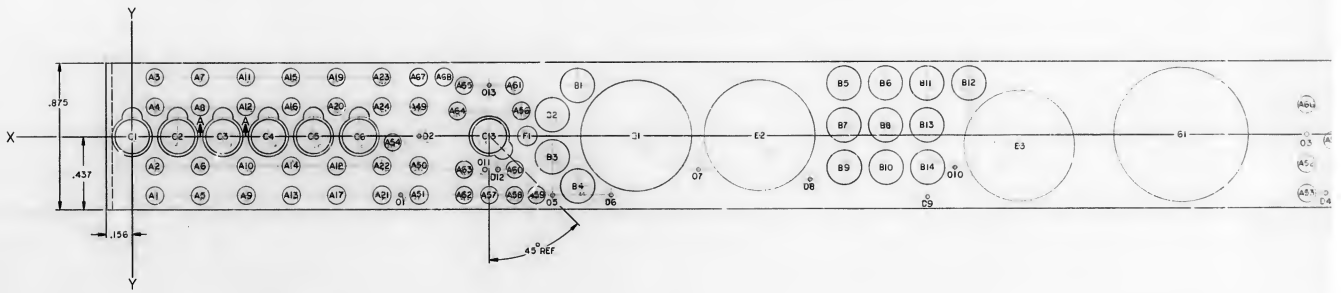
HOLE IDENT	BASIC X DIM.	BASIC Y DIM.	HOLE DIA	⌖ .01 A	QTY
D1	1.595	-.350			
D2	1.705	.000			
D3	6.995	.000			
D4	7.105	-.350			
D5	2.500	-.350			
D6	2.850	-.350	.023 .027	.005	13
D7	3.370	-.200			
D8	4.035	-.260			
D9	4.735	-.365			
D10	4.900	-.190			
D11	2.100	-.200			
D12	2.175	-.200			
D13	2.125	.300			
E1	3.000	.000	.654 .651	.005	3
E2	3.735	.000			
E3	5.285	-.065			
F1	2.350	.000	.112 / .116	.005	1
G1	6.250	.000	.794/.801	.005	1



PARTIAL SECTION A-A
ROTATE 135° CLOCKWISE FOR HOLE C13







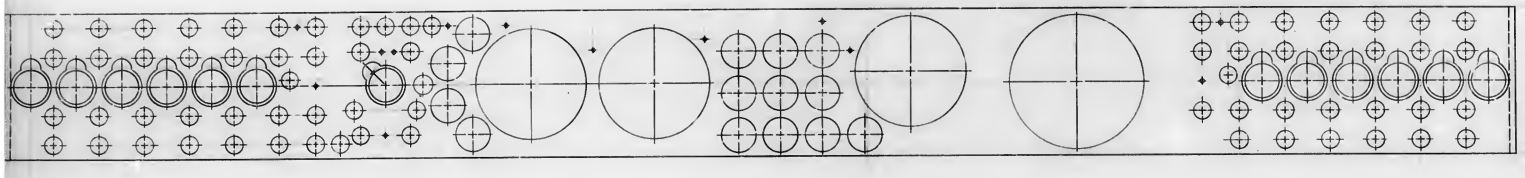
NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: PLASTIC CLEAR ACRYLIC PER MIL-P-8184 FINISH B, ALT: MIL-P-5425 FINISH B
3. TRUE POSITION AS SHOWN IN CHART
4. REMOVE ALL SHARP EDGES

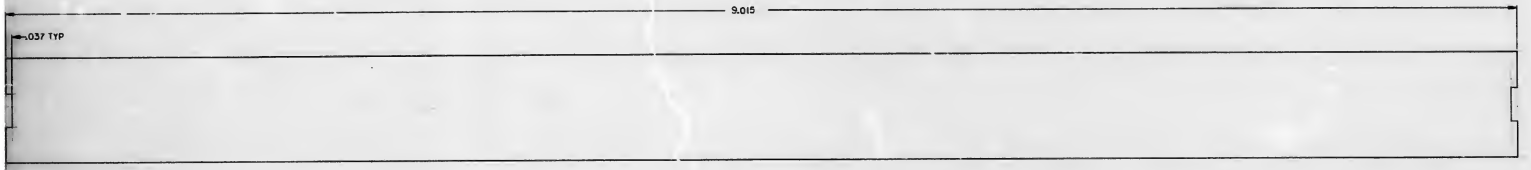
1004259 A

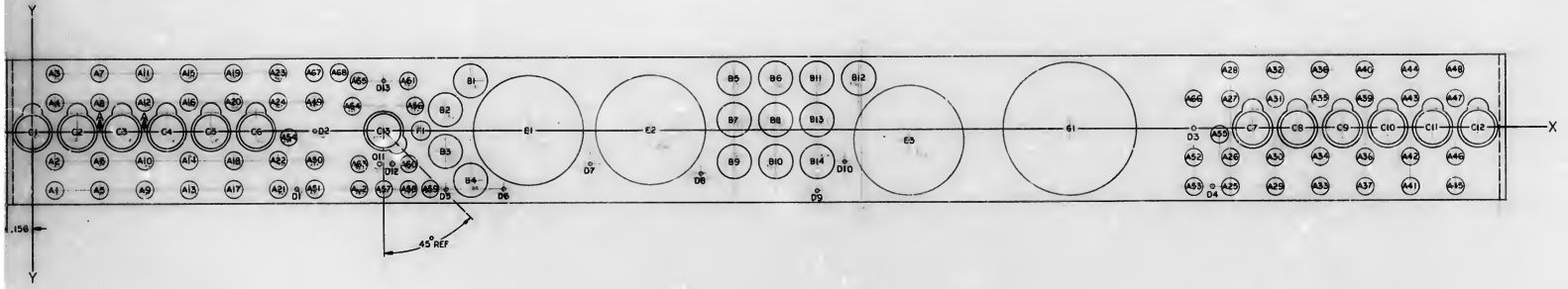
INCHES

1004259 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	REVISED PER TDRR 04491		







QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS .005 ANGLES ± 2° DO NOT SCALE THIS DRAWING	
		MATERIAL SEE NOTE 2	
		HEAT TREATMENT	
		FINAL FINISH	
1003175			
NEXT ASSY	USED ON		
APPLICATION			

MIT INSTRUMENTATION LAB Cambridge, Mass.

DRAWN Ed Dennis DATE 12-Dec-63
CHECKED
APPROVED
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

HOLDER, COMPONENT
DRIVER SERVICE MODULE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	J	1004259

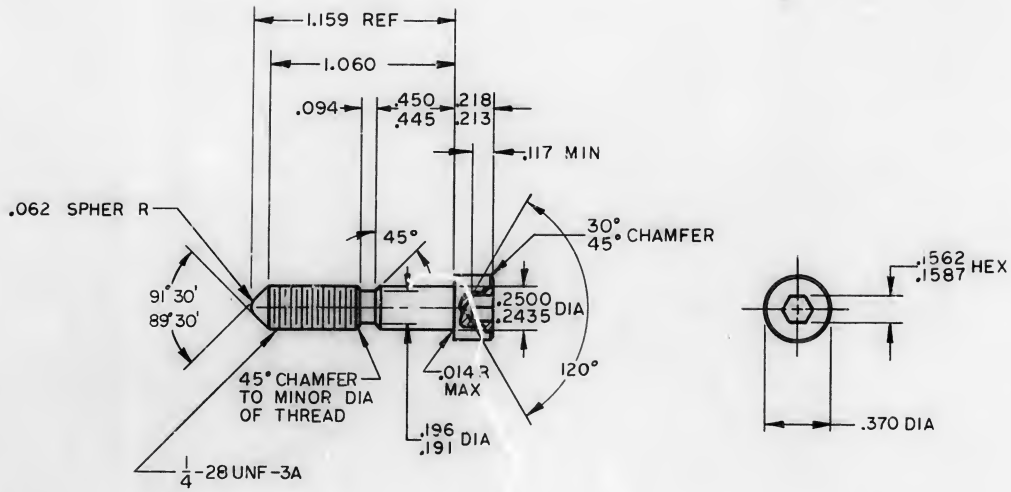
SCALE 4/1 WT SHEET 1 OF 1

1004259 A

INCHES

1004261

REVISIONS 03/39			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: MAKE FROM SHOULDER SCREW, UNKNURLED HEAD/ MS-16637-15 OR 416 CRES/QQ-S-763
3. FINISH: PASSIVATE/ MIL-F-14072 E300.
4. 63 ALL OVER UNLESS OTHERWISE SPECIFIED.
5. BREAK SHARP EDGES .005 .015

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± XXX±.005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL: SEE NOTE 2

HEAT TREATMENT: R_C 37 TO R_C 40

FINAL FINISH: SEE NOTE 3

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN E. Gross DATE 26 AUG 63
CHECKED
APPROVAL W.D. Thurman 10 SEP 63
APPROVAL
NASA APPROVAL 11/12/63
MIT APPROVAL 12 Sep 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCREW, JACK

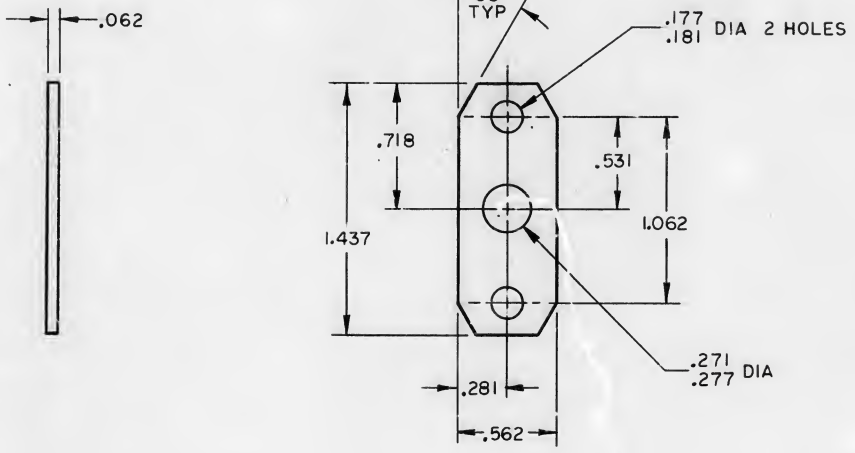
CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004261

SCALE 2/1 WT SHEET 1 OF 1

1004261

A 1004262

REVISIONS 03/39			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05639	1/7/64	



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: 410 CRES/QQ-S-766 CLASS 410
3. PASSIVATE / MIL-F-14072, E300
4. BREAK SHARP EDGES $^{.005}_{.015}$

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
±— XXX±.005 ±2°
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
HEAT TREATMENT
R_C 37 TO R_C 40
FINAL FINISH
SEE NOTE 3

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN E. Grassy DATE 27 AUG 63
CHECKED L. Ringham 10 SEP 63
APPROVAL W.B. Linvill 10 SEP 63
APPROVAL
NASA APPROVAL W.J. Duggan 9/12/63
MIT APPROVAL W. Kuyper 12 Sept 63

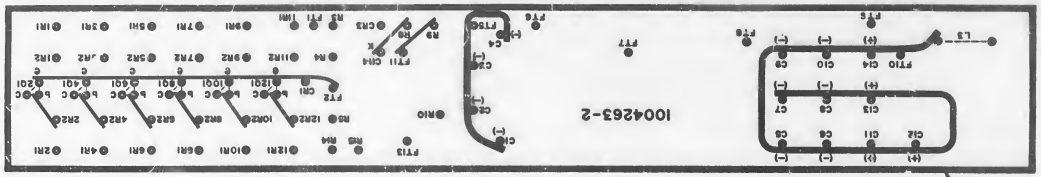
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

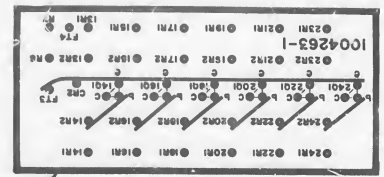
PLATE, BACKING

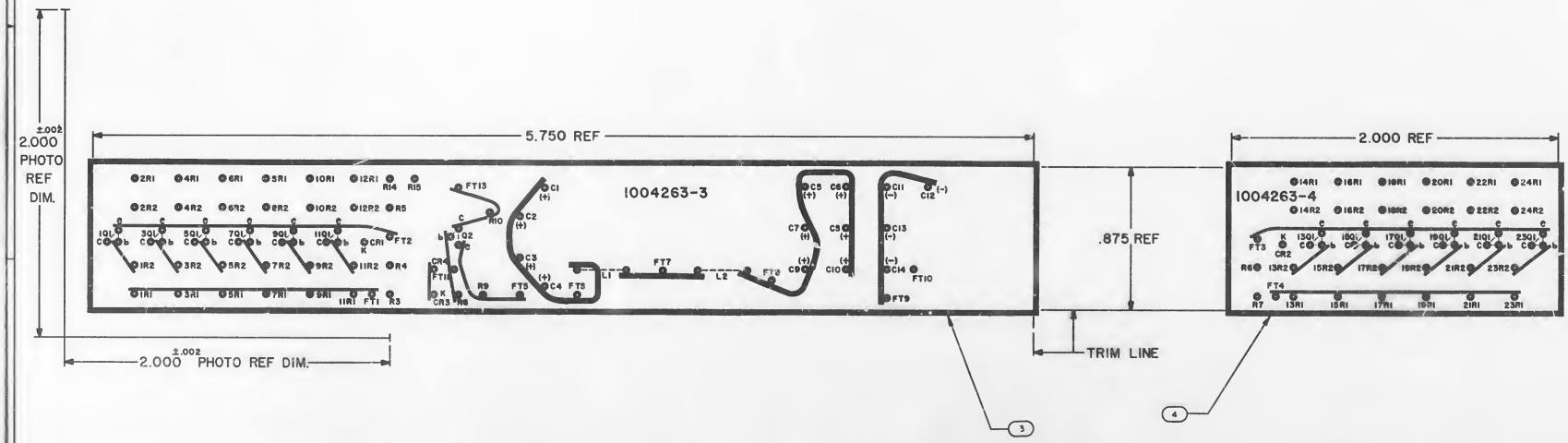
CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004262
SCALE 2/1	WT	SHEET 1 OF 1

MASTER

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	REVISED PER TDRR 09017	9-17-63	[illegible]
B	REVISED PER TDRR 07263 DR [illegible] CHK [illegible]	7-26-63	[illegible]
C	REVISED PER TDRR 10738 DR R. Edmond CHK [illegible]	8-1-64	[illegible]







NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. CUT TO WITHIN .010 OF TRIMLINE
4. MAKE MASTER PATTERN POSITIVE FILM TO DIMENSIONS SHOWN
5. MATERIAL: FILM .008/.008 PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. ⊕ .040/.050 DIA PUNCH ALL HOLES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1004263-4	INSULATOR	4
1	1004263-3	INSULATOR	3
1	1004263-2	INSULATOR	2
1	1004263-1	INSULATOR	1

LIST OF MATERIALS

NEXT ASSY 1003175	USED ON 1003400	APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT
FINISH

MIT INSTRUMENTATION LAB
DRAWN Sol Pomerantz DATE 11-5-63
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGRAPHIC MASTER

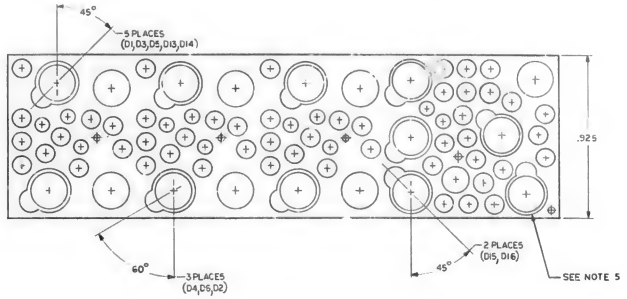
DRIVER SERVICE MODULE

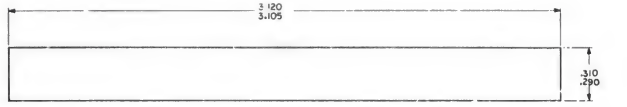
CODE IDENT NO. | SIZE | NASA DRAWING NO.
— | E | 1004263

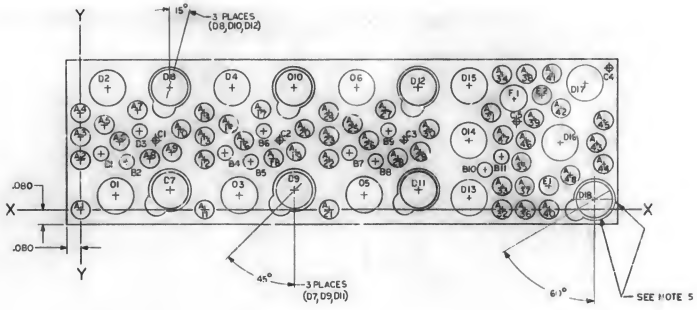
SCALE 4/1 | WT | SHEET 1 OF 1

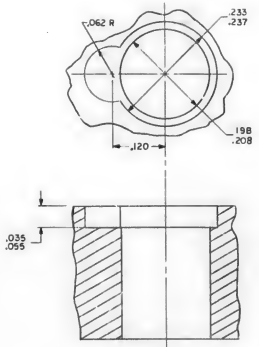
HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⌖ DIA	HOLE DIA	QTY
A1	.000	.000			
A2	.000	.280			
A3	.000	.410			
A4	.000	.545			
A5	.135	.480			
A6	.225	.385			
A7	.320	.560			
A8	.390	.285			
A9	.515	.320			
A10	.565	.450			
A11	.700	.000			
A12	.700	.280			
A13	.700	.410			
A14	.700	.545			
A15	.835	.480			
A16	.925	.385			
A17	1.020	.560			
A18	1.090	.285			
A19	1.215	.320			
A20	1.265	.450			
A21	1.400	.000			
A22	1.400	.280			
A23	1.400	.410			
A24	1.400	.545			
A25	1.535	.480	.010	.100 .104	48
A26	1.625	.385			
A27	1.720	.560			
A28	1.790	.285			
A29	1.915	.320			
A30	1.965	.450			
A31	2.310	.545			
A32	2.375	.000			
A33	2.375	.130			
A34	2.375	.765			
A35	2.485	.265			
A36	2.510	.000			
A37	2.505	.130			
A38	2.513	.765			
A39	2.595	.515			
A40	2.640	.000			
A41	2.660	.765			
A42	2.710	.570			
A43	2.910	.380			
A44	2.950	.255			
A45	2.950	.505			
A46	2.510	.390			
A47	2.380	.420			
A48	2.760	.190			
B1	.115	.315			
B2	.260	.270			
B3	.335	.440			
B4	.815	.315			
B5	.960	.270			
B6	1.035	.440	.010	.081 .085	11
B7	1.515	.315			
B8	1.660	.270			
B9	1.735	.440			
B10	2.280	.225			
B11	2.370	.295			

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
C1	.425	.390			
C2	1.125	.390			
C3	1.825	.390	.010	.023 .027	5
C4	2.980	.800			
C5	2.455	.495			
D1	.195	.080			
D2	.155	.685			
D3	.895	.080			
D4	.855	.685			
D5	1.595	.080			
D6	1.555	.685			
D7	.505	.110			
D8	.505	.685			
D9	1.205	.110			
D10	1.205	.685			
D11	1.905	.110	.010	SEE DETAIL A	18
D12	1.905	.685			
D13	2.190	.065			
D14	2.190	.365			
D15	2.190	.700			
D16	2.705	.375			
D17	2.845	.710			
D18	2.895	.055			
E1	2.640	.135			
E2	2.600	.645	.010	.108 .112	2
F1	2.440	.625			
			.010	.153 .157	1









DETAIL A
SCALE 10/1
"D" HOLES, 18 PLACES
SEE TOP AND BOTTOM VIEWS FOR TAB ORIENTATION

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-0-70327
2. MATERIAL: PLASTIC ACRYLIC PER MIL-P-5425, FINISH B ALT. MIL-P-8184 FINISH B
3. TRUE POSITIONING AS SHOWN IN CHART
4. BREAK ALL SHARP EDGES
5. BREAKOUT ALLOWED BETWEEN COUNTERBORE OF HOLES D17 AND D18 AND EDGE OF BLOCK

REVISIONS			
QTY	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 04928	5 MAR 68	

QTY REQ'D	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
LIST OF MATERIALS			

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .005 ± 3°
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

1003166
NEXT ASSY USED ON
APPLICATION

M I T INSTRUMENTATION LAB CAMBRIDGE 39, MASS.

DRAWN [illegible] DATE 5 MAR 68
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

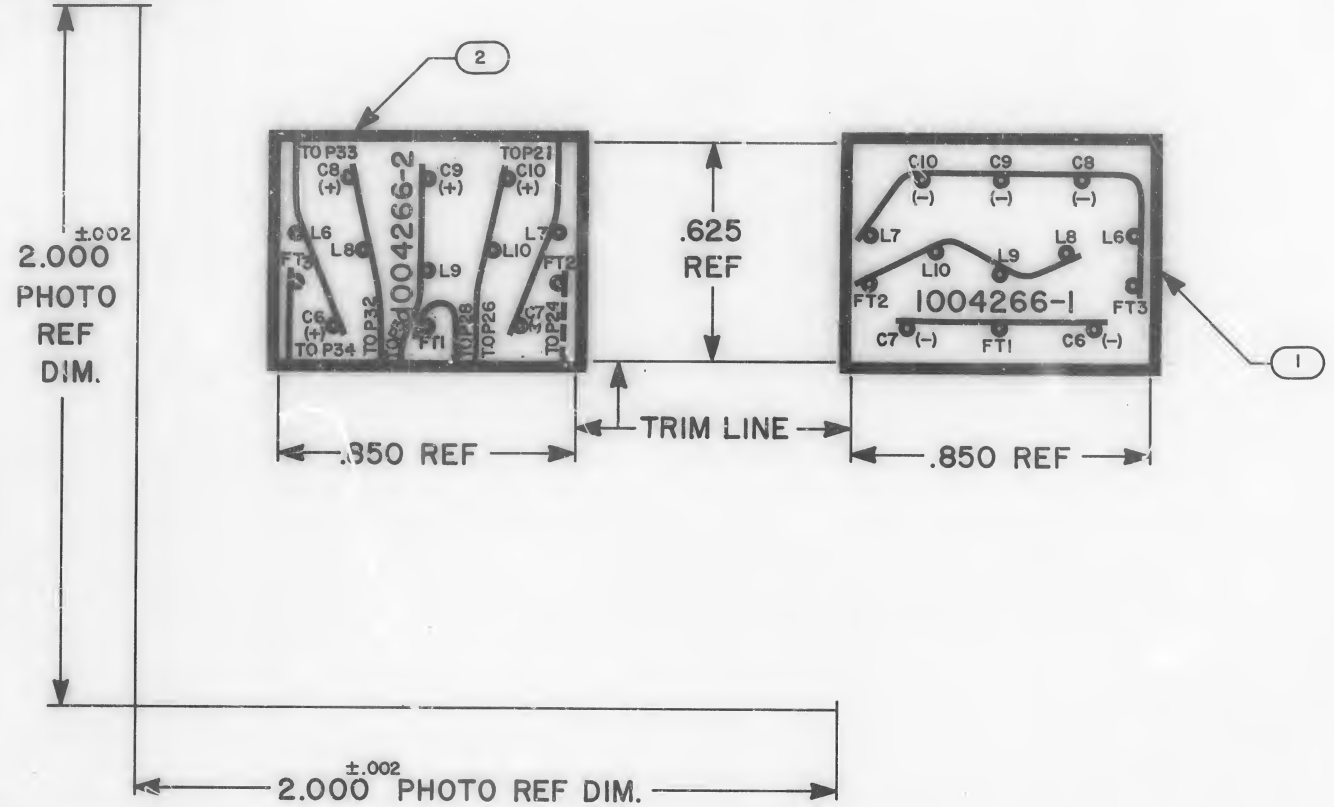
HOLDER, COMPONENT
STRAND GATE MODULE

CODE IDENT NO —— SIZE E NASA DRAWING NO 1004264
SCALE 4/1 WT SHEET 1 OF 1

1004264

1004266

REVISIONS 04/47			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. CUT WITHIN .010 OF TRIM LINE
6. Ⓢ .045 /.050 DIA PUNCH ALL HOLES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1004266-2	INSULATOR	2
1	1004266-1	INSULATOR	1

LIST OF MATERIALS

1003171	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 3
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN C.A. Puerta DATE 9-9-63
CHECKED R.P. Lungstrum 22 OCT 63
APPROVAL W.T. Comer 23 OCT 63
APPROVAL
NASA APPROVAL H.O. Burney 10/24/63
MIT APPROVAL 24 OCT 1963

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

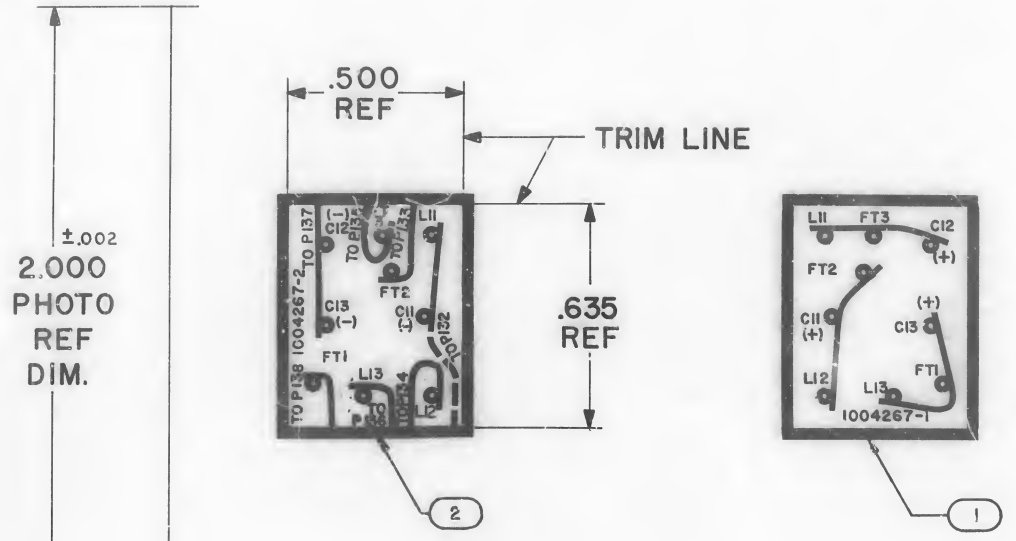
INSULATOR PHOTOGRAPHIC MASTER STRAND GATE MODULE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004266
SCALE 4/1	WT	SHEET 1 OF 1

1004266

B 1004267

REVISIONS 04147			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 04741	11-19-63	DAK DAK
B	REVISED PER TDRR 06430	3/12/64	DAK W.TB. DAK



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. CUT TO WITHIN .010 OF TRIMLINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM.007/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. ⊙ .045/.050 DIA PUNCH ALL HOLES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	
1	1004267-2	INSULATOR	2
1	1004267-1	INSULATOR	1

1003172	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG. NO. CONTRACT

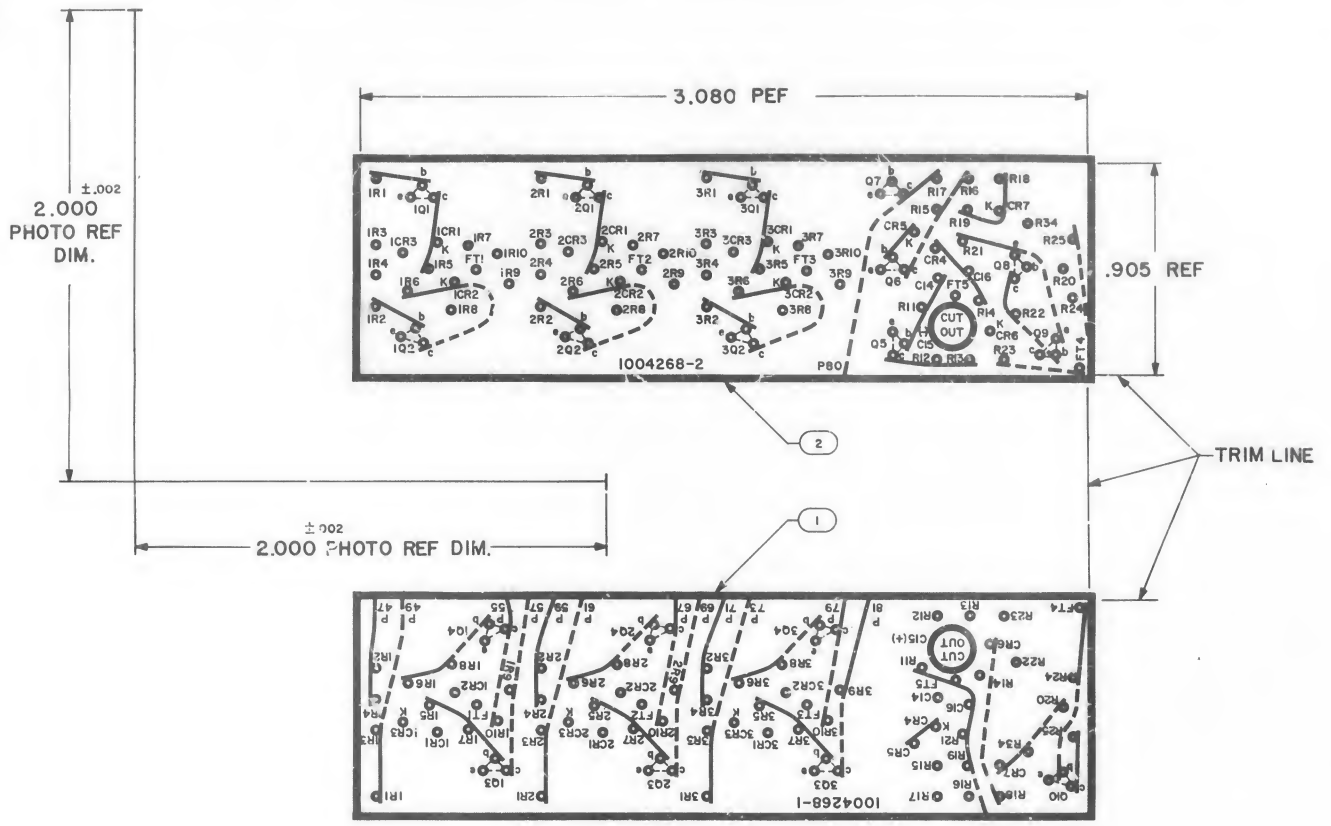
DRAWN N. Horgan DATE 9-6-63
CHECKED R.P. Kingsbury 22 OCT 63
APPROVAL W.S. Lunde 23 OCT 63
APPROVAL
NASA APPROVAL 10/24/63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGRAPHIC MASTER
STRAND GATE MODULE, B31

CODE IDENT NO. —
SIZE C
NASA DRAWING NO. 1004267
SCALE 4:1
WT
SHEET 1 OF 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRP 07269 DR D.A. Clement CHK A.M.	8/24/64	



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. CUT WITHIN .010 OF TRIM LINE
6. ⊙ .045/.050 DIA PUNCH ALL HOLES

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
1	1004268-2	INSULATOR	2
1	1004268-1	INSULATOR	1

LIST OF MATERIALS

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES	
		DO NOT SCALE THIS DRAWING	
		MATERIAL SEE NOTE 2	
1003165		HEAT TREATMENT	
NEXT ASSY	USED ON	FINAL FINISH	
APPLICATION			

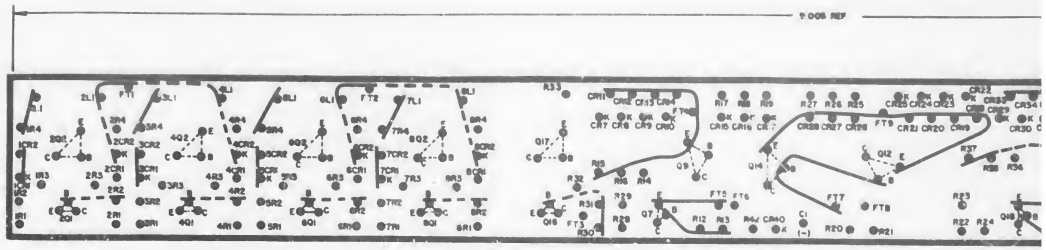
M I T INSTRUMENTATION LAB Cambridge Mass
ENG NO CONTRACT
DRAWN D.A. Clement DATE 8/24/64
CHECKED A. Hopkins DATE 8/27/64
APPROVAL A.L. Hopkins DATE 8/27/64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

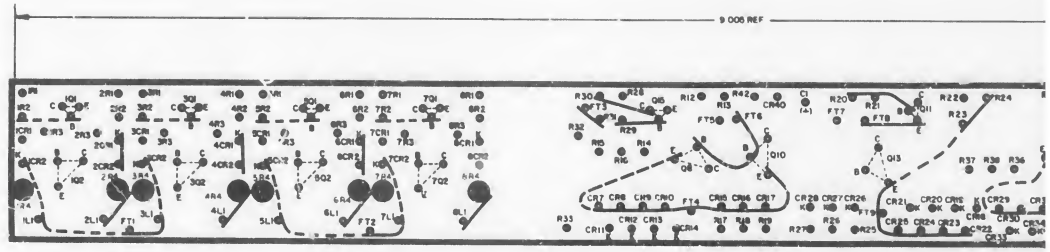
MANNED SPACECRAFT CENTER
HOUSTON TEXAS

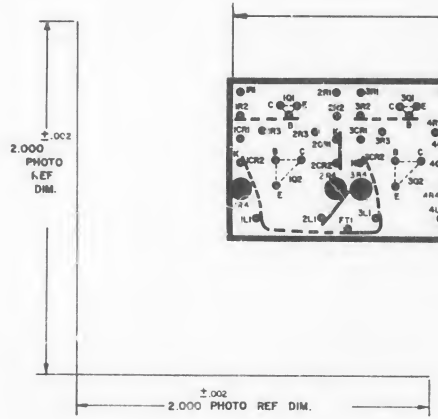
INSULATOR PHOTOGRAPHIC MASTER
STRAND GATE MODULE

CODE IDENT NO	SIZE	NASA DRAWING NO
—	D	1004268
SCALE 4/1	WT	SHEET 1 OF 1

1004268

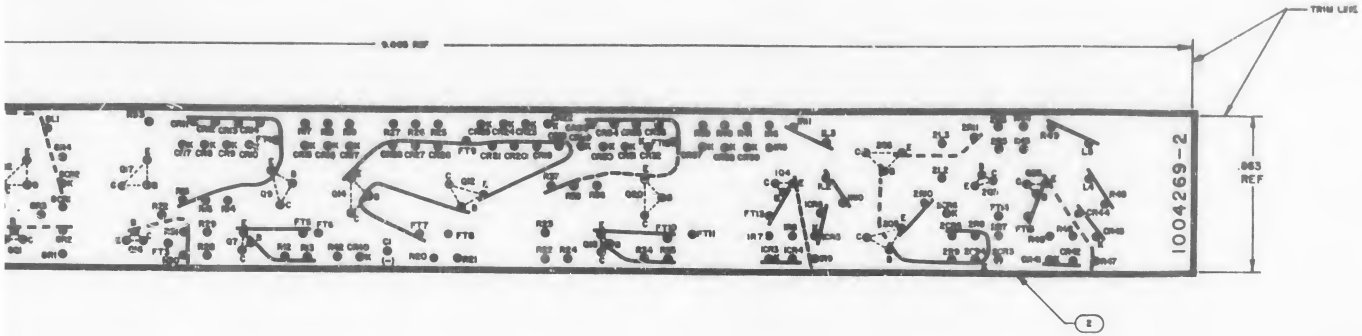


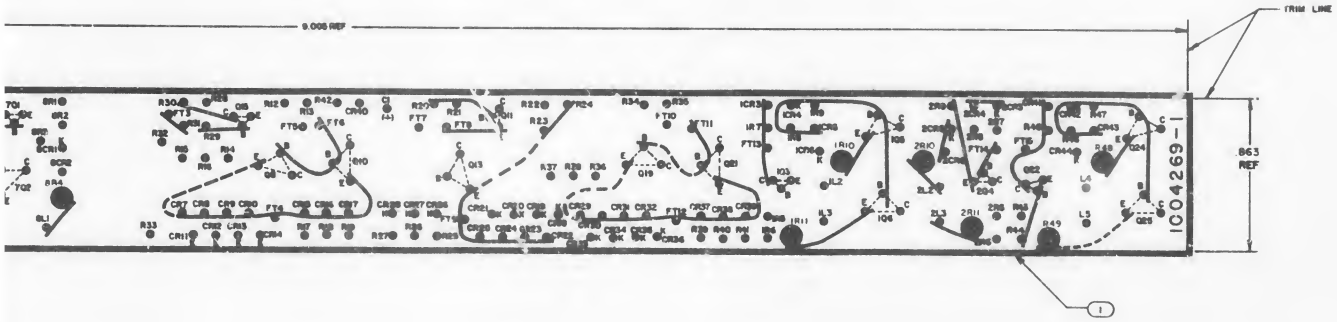




NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. MATERIAL FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE 1A
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. CUT TO WITHIN .010 OF TRIM LINE
6. ● .045/.050 DIA PUNCH
7. ● .119/.121 DIA PUNCH





A	REVISED PER TDRR	
B	REVISED PER TDRR	
C	REVISED PER TDRR 05188	
D	REVISED PER & TDRR 07264 DRAWING CHK APPD	
E	REVISED PER TDRR 07/88 DRAWN CHK APP'D	

1	1004269-2	INSULATOR
1	1004269-1	INSULATOR

1003178

SEE NOTE 3

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

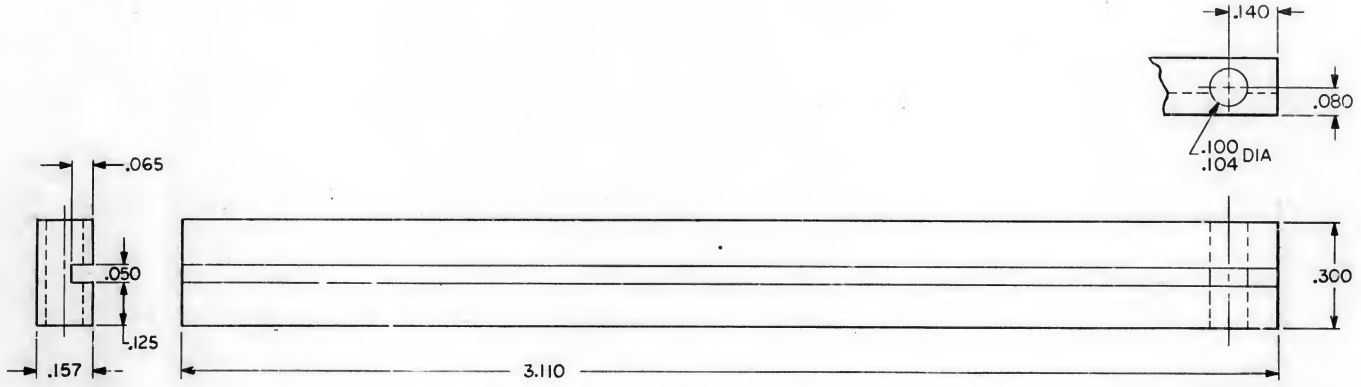
INSULATOR
PHOTOGRAPHIC MASTER
ROPE DRIVEN

SIZE J
1004269

SCALE 4/1

1004270

REVISIONS 04147			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAT'L: PLASTIC, ACRYLIC PER MIL-P-5425 FINISH A
3. BREAK SHARP EDGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1003182	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN R. Butler DATE 16 SEP 63
CHECKED [illegible] 22 OCT 63
APPROVAL [illegible] 23 OCT 63
APPROVAL [illegible]
NASA APPROVAL [illegible] 10/24/63
MIT APPROVAL [illegible] 24 OCT 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

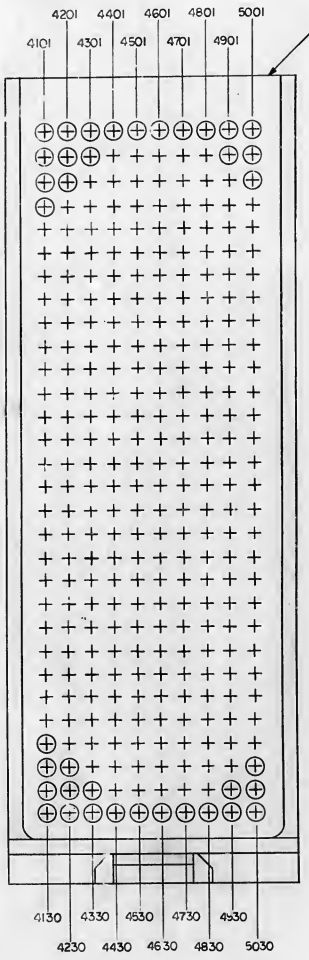
BLOCK, SPACER
STRAND GATE MODULE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004270
SCALE 4/1	WT	SHEET 1 OF 1

1004270

REVISIONS 03649			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 04506	4-6-67	

GUIDANCE COMPUTER INTERFACE CONNECTOR 05A4J5, VIEWED FROM THE PIN SIDE OF THE MALE CONNECTOR, OR THE WIRING SIDE OF THE FEMALE



4101	4201 167	4301 167	4401 169	4501 169	4601	4701 170	4801 170	4901 168	5001 168
4102	4202 239	4302 001 S	4402 126 S	4502 126 R	4602	4702 149 S	4802 149 R	4902 150 S	5002 150 R
4103	4203 239	4303 001 R	4403 127 S	4503 127 R	4603 166	4703 151 S	4803 151 R	4903 152 S	5003 152 R
4104	4204 240	4304 171	4404 128 S	4504 128 R	4604 175	4704 153 S	4804 153 R	4904 154 S	5004 154 R
4105	4205 241	4305 172	4405 129 S	4505 129 R	4605 176	4705 155 S	4805 155 R	4905 156 S	5005 156 R
4106	4206 243	4306 173	4406 130 S	4506 130 R	4606 177	4706 114 S	4806 114 R	4906 115 S	5006 115 R
4107	4207 139 S	4307 139 R	4407 131 S	4507 131 R	4607 101	4707 116 S	4807 116 R	4907 117 S	5007 117 R
4108	4208 140 S	4308 140 R	4408 145 S	4508 145 R	4608 164	4708 102	4808 103	4908 104	5008 105
4109	4209 142 S	4309 142 R	4409 146 S	4509 146 R	4609 178	4709 106	4809 107	4909 158	5009 159
4110	4210 143 S	4310 143 R	4410 147 S	4510 147 R	4610 165	4710 160	4810 161	4910 162	5010 163
4111	4211 144 S	4311 144 R	4411 148 S	4511 148 R	4611 181 note 4	4711 214	4811 215	4911 216	5011 217
4112	4212 118 S	4312 118 R	4412 119 S	4512 119 R	4612 026 C	4712 218	4812 219	4912 220	5012 221
4113	4213 120 S	4313 120 R	4413 121 S	4513 121 R	4613 026 S	4713 222	4813 223	4913 224	5013 225
4114	4214 122 S	4314 122 R	4414 123 S	4514 123 R	4614 245	4714 226	4814 227	4914 228	5014 229
4115	4215 124 S	4315 124 R	4415 132 S	4515 132 R	4615 179	4715 230	4815 231	4915 232	5015 233
4116	4216 133 S	4316 133 R	4416 134 S	4516 134 R	4616 157 C	4716 234	4816 235	4916 236	5016 237
4117	4217 135 S	4317 135 R	4417 136 S	4517 136 R	4617 157 S	4717 212	4817 238	4917 242	5017 244
4118	4218 137 S	4318 137 R	4418 138 S	4518 138 R	4618 330 note 2	4718 201	4818 202	4918 203	5018 204
4119	4219 141 S	4319 141 R	4419 108 S	4519 108 R	4619 250	4719 205	4819 206	4919 207	5019 208
4120	4220 109 S	4320 109 R	4420 110 S	4520 110 R	4620 434 note 3	4720 209	4820 210	4920 246	5020 211
4121	4221 111 S	4321 111 R	4421 112 S	4521 112 R	4621 213	4721 027 S	4821 027 R	4921 028 S	5021 028 R
4122	4222 004 S	4322 004 R	4422 005 S	4522 005 R	4622 040 S	4722 029 S	4822 029 R	4922 030 S	5022 030 R
4123	4223 006 S	4323 006 R	4423 007 S	4523 007 R	4623 040 R	4723 031 S	4823 031 R	4923 032 S	5023 032 R
4124	4224 014 S	4324 014 R	4424 015 S	4524 015 R	4624 247	4724 033 S	4824 033 R	4924 035 S	5024 035 R
4125 CNSHLD	4225 016 S	4325 016 R	4425 024 S	4525 024 R	4625 017 S	4725 036 S	4825 036 R	4925 037 S	5025 037 R
4126 CNTRL 1	4226 025 S	4326 025 R	4426 008 S	4526 008 R	4626 017 R	4726 038 S	4826 038 R	4926 039 S	5025 039 R
4127 CNTRL 2	4227 009 S	4327 009 R	4427 010 S	4527 010 R	4627 248	4727 041 S	4827 041 R	4927 042 S	5027 042 R
4128 MT SHLD	4228 011 S	4328 011 R	4428 012 S	4528 012 R	4628 050 S	4728 043 S	4828 043 R	4928 044 S	5028 044 R
4129 MTHI	4229 013 S	4329 013 R	4429 054 S	4529 054 R	4629 050 R	4729 045 S	4829 045 R	4929 046 S	5029 046 R
4130 MTLO	4230 056 S	4330 056 R	4430 057 S	4530 057 R	4630 249	4730 047 S	4830 047 R	4930 048 S	5030 048 R

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. THE RETURNS OF ALL SIGNALS TO THE NAV DSKY ARE COMMONED UP AND BROUGHT IN ON PIN NO. 4618
3. THE RETURNS OF ALL SIGNALS TO THE MAIN DSKY ARE COMMONED UP AND BROUGHT IN ON PIN NO. 4620
4. THE RETURNS OF THE MODE SWITCHING SIGNALS ARE COMMONED UP AND BROUGHT IN ON PIN NO. 4611

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS
DWG. NO. CONTRACT

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

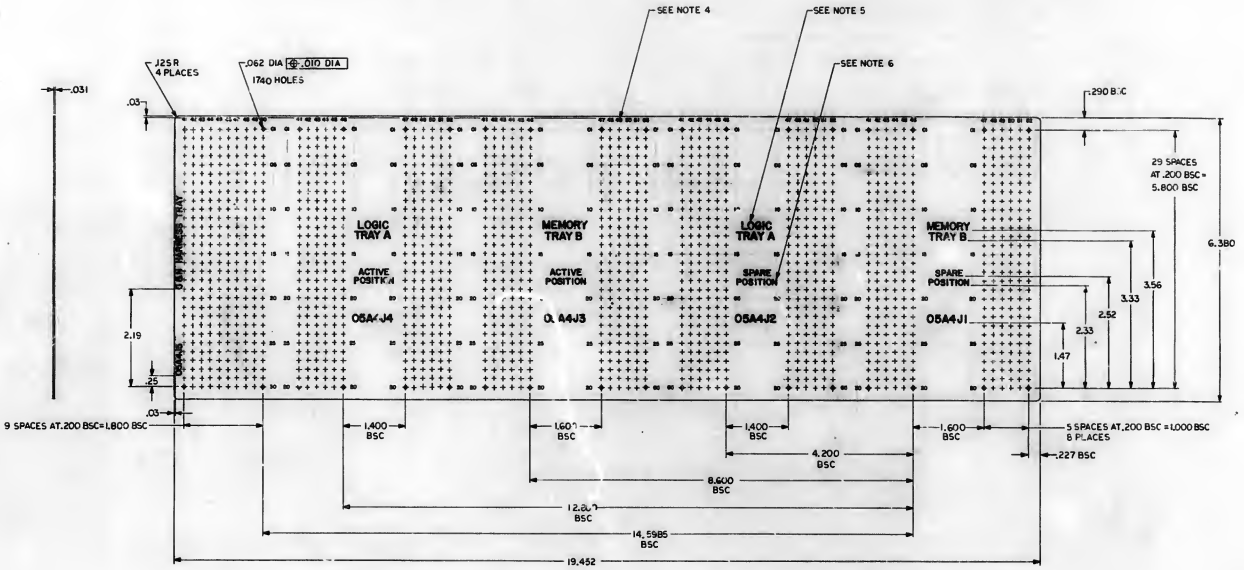
DRAWN J Cowley DATE 2-28-63
CHECKED RF Piccirelli 4-19-63
APPROVAL DS Bowen 20 Mar 63
APPROVAL Vincent 20 Mar 63
NASA APPROVAL W D Rhine 10-3-63
MIT APPROVAL W Hyatt 3 Oct 63

SIGNAL PIN ASSIGNMENT AGC INTERFACE CONNECTOR

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	D	1004271
SCALE	WT	SHEET OF

1004271

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: PLASTIC SHEET, LAMINATED PER MIL-P-18177 TYPE GEB
3. REMOVE BURRS AND BREAK SHARP EDGES
4. MARK $\begin{smallmatrix}.100\\.080\end{smallmatrix}$ HIGH WHITE PER ND1002019
5. MARK $\begin{smallmatrix}.170\\.150\end{smallmatrix}$ HIGH WHITE PER ND1002019
6. MARK $\begin{smallmatrix}.135\\.115\end{smallmatrix}$ HIGH WHITE PER ND1002019

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
XX ± .005
XX ± .02
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH
NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DRAWN DATE 10-7-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

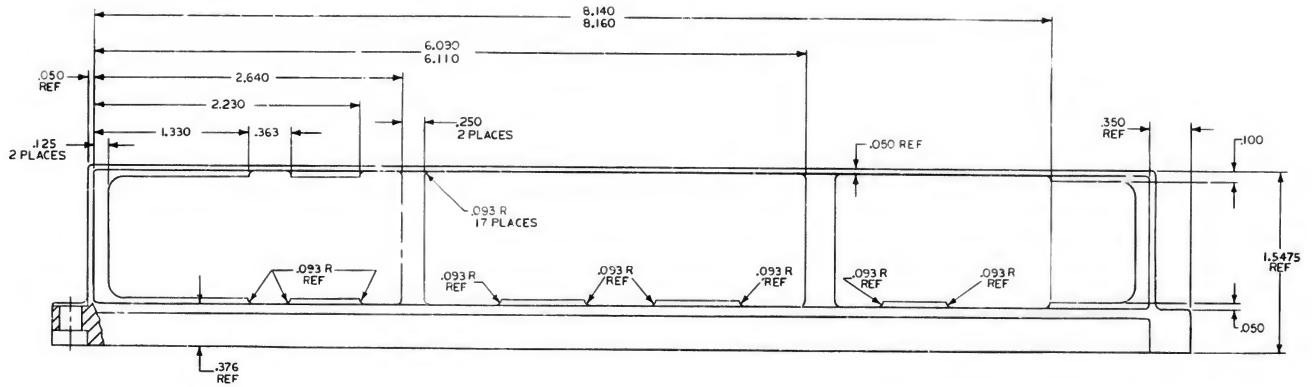
PIN IDENTIFICATION BOARD
COMPUTER END

CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1004273
SCALE 1/1 | WT | SHEET 1 OF 1

1004273

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 08411 DR B Jensen CHK A.P.B.	9/9/64	

REVISIONS 04147



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: MAKE FROM 1U04201
3. FINISH: ANODIZE PER MIL-M-45202, TYPE II, CLASS C
4. UNLESS OTHERWISE SPECIFIED 125 ALL OVER
5. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII .005/.020
6. REMOVE ALL BURRS AND BREAK SHARP EDGES .005-.015

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ± DO NOT SCALE THIS DRAWING	MATERIAL SEE NOTE 2
1003175			HEAT TREATMENT
NEXT ASSY	USED ON		FINAL FINISH SEE NOTE 3
APPLICATION			

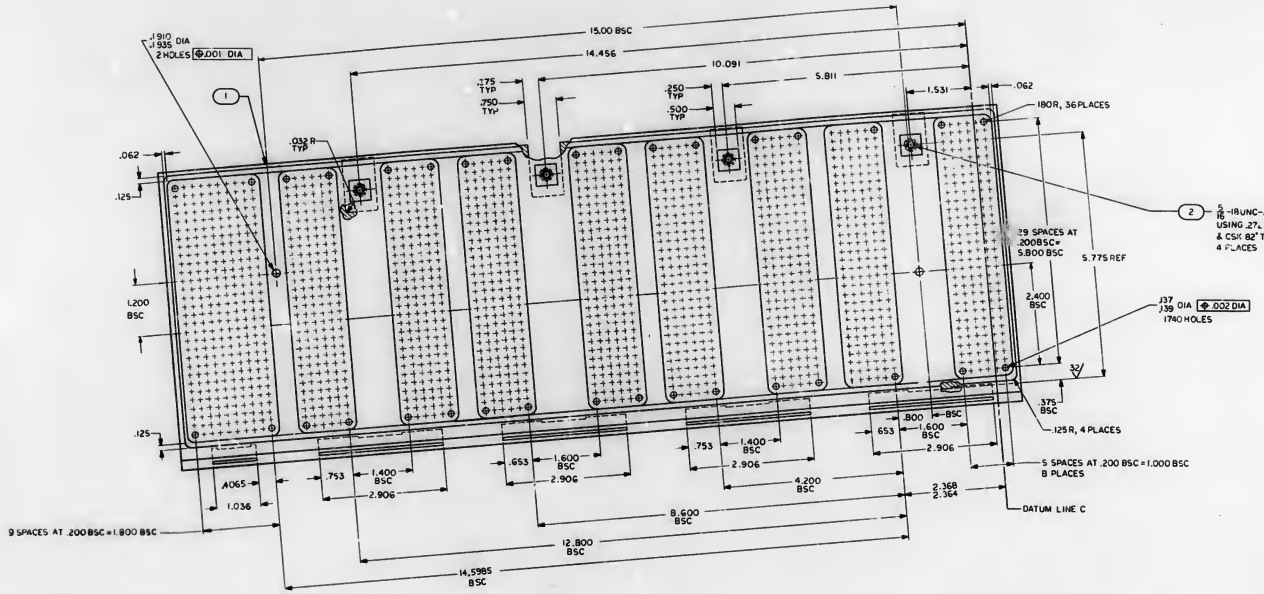
MIT INSTRUMENTATION LAB Cambridge Mass
DWG NO CONTRACT
DRAWN D.E. Hebert DATE 12/12/63
CHECKED L. Pinkham 12-24-63
APPROVAL N.S. Tanner 23 DEC 63
APPROVAL
NASA APPROVAL L. Savage 12-24-63
MIT APPROVAL

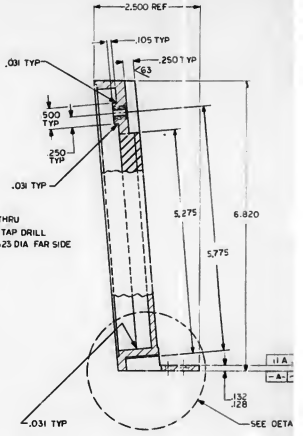
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

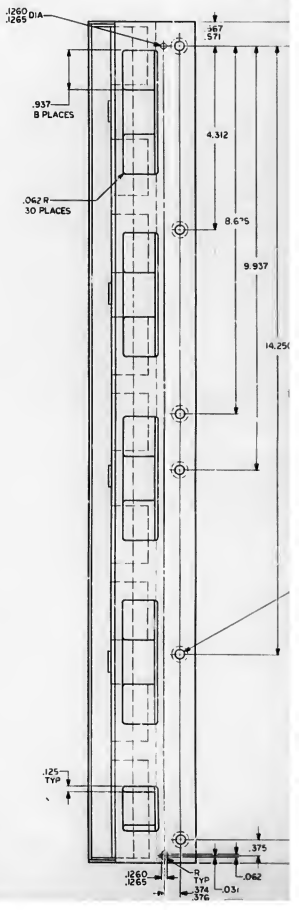
HEADER HOUSING STRAND GATE MODULE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
—	D	1004274

SCALE 2/1 WT SHEET 1 OF 1

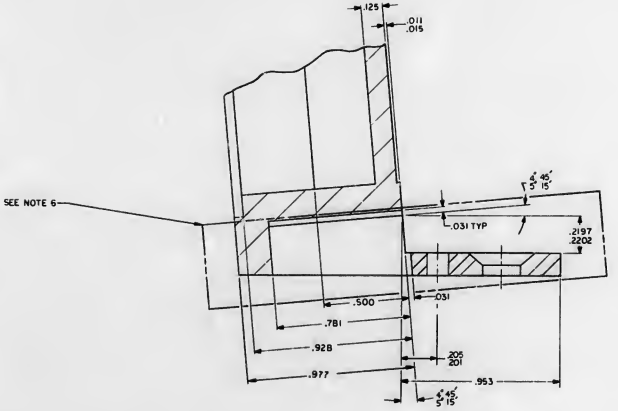




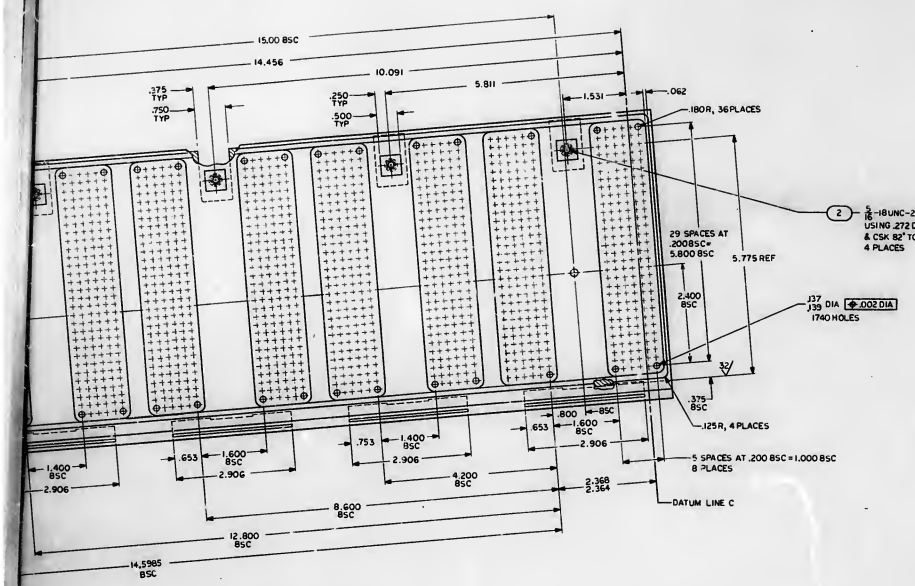


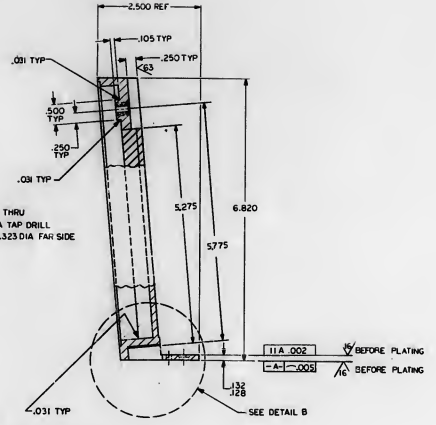
NOTES –

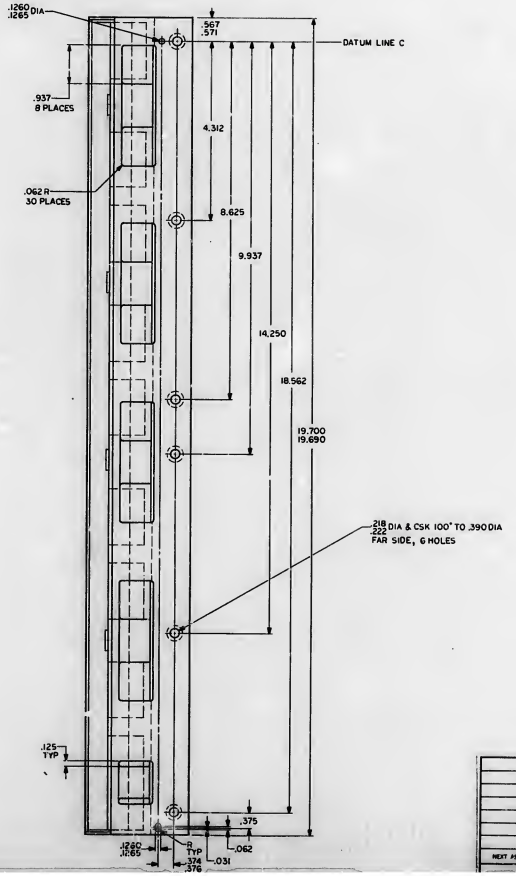
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: 6061-T6 AL PER QQ-A-325,
3. REMOVE BURRS & SHARP EDGES .005/.015
4. 125/ ALL OVER UNLESS OTHERWISE SPECIFIED
5. FINISH SEE NOTE 6 FOR PLATED AREAS. ALL NONPLATED SURFACES TO BE ANODIZED PER MIL-A-8625, TYPE II, DYED BLACK. PLUG ALL DOWEL HOLES BEFORE ANODIZING
6. PHANTOM LINES INDICATE SURFACES TO BE FREE FROM ANODIZE AND PLATED. PLATE (ELECTRODEPOSITED) PER QQ-C-320 CLASS 1, TYPE II, .0002 THICK, C70-72 ROCKWELL HARDNESS. DIMENSIONS APPLY AFTER PLATING. FINISH 32/ AFTER PLATING

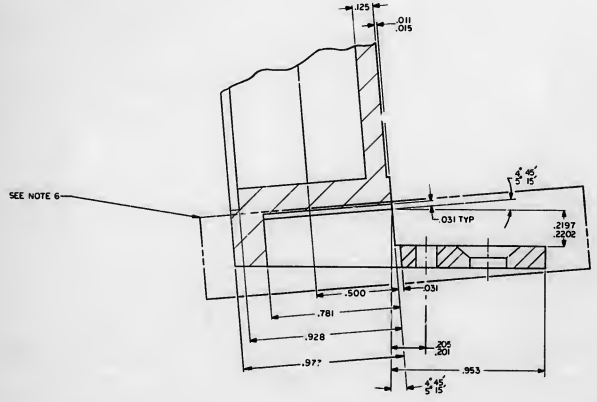


DETAIL B
SCALE 4/1









DETAIL B
SCALE 4/1

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
4	NAS1394CA-3L	INSERT, SELF-LOCKING	2
1	1004275-1	CONNECTOR, COMPUTER END	1

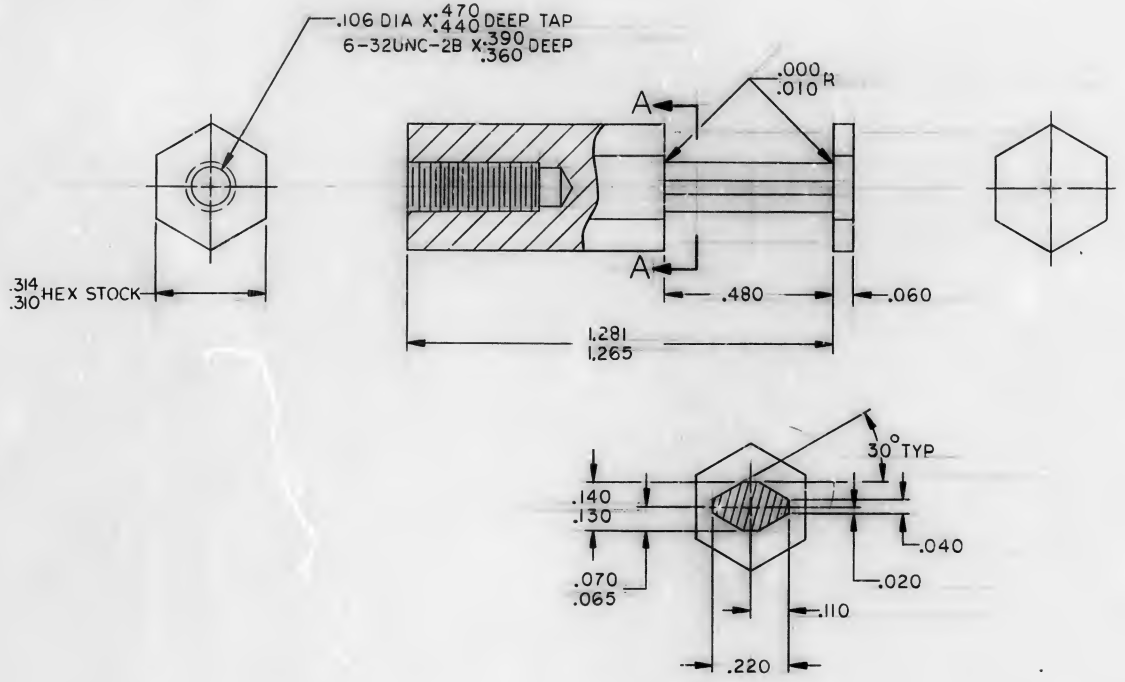
LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± .005 ANGLES ± 1/2 DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
MATERIAL SEE NOTE 2	DRAWN C.L. Hayes DATE 2-26-63 CHECKED C.L. Hayes Larry Bostick APPROVAL J.C. Fischella, Mgr. Proj. Eng. APPROVAL J. Hayes	CONNECTOR, COMPUTER END	
HEAT TREATMENT —	NASA APPROVAL Richard Hubbell	CODE IDENT NO.	SIZE J
NEXT ASSY	USED ON	FINISH SEE NOTE 6	NASA DRAWING NO. 1004275

A	1004276	(M)

REVISIONS 03648

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 04006	10-16-63	ER WR



SECTION A-A

NOTES

1 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2 MATL : CRES PER QQ-S-763, CLASS 303, COND A
3 REMOVE BURRS AND BREAK SHARP EDGES
4 125√ FINISH ALL OVER
5 PASSIVATE PER MIL-F-14072, FINISH E300, TYPE I.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1003155	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH SEE NOTE 5

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Ed Powers DATE 30 Sept 63
CHECKED
APPROVAL W.S. Hammer 2 OCT 63
APPROVAL E.J. Duggan 10/6/63
NASA APPROVAL W.J. Wheeler 10-3-63
MIT APPROVAL W.K. Fuller 30 Oct 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SPACER , SPECIAL

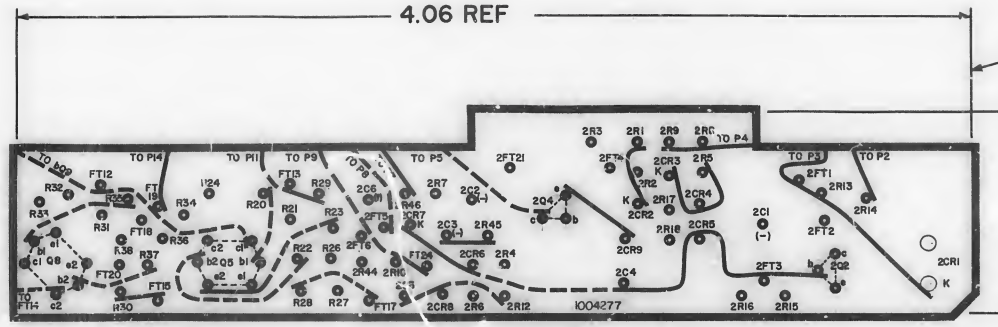
G+N HARNESS CONN PLATE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
—	C	1004276
SCALE 4/1	WT	SHEET 1 OF 1

1004276

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 04477	11-6-67	EDK WK
B	REVISED PER TDRR 05194	11 DEC 68	EDK WK

REVISIONS 04005



±.002
2.000 PHOTO REF DIM.

±.002
2.000 PHOTO REF DIM.

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM .006/.008 THK PER L-F-340, TYPE IB, CL 2, STYLE 1A
6. ⊕ .035/.045 DIA PUNCH
7. BROKEN LINES DENOTE SLEEVING
8. ◯ .057/.067 DIA PUNCH

QTY REQ'D	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT
FINAL FINISH
1003150
NEXT ASSY | USED ON
APPLICATION

M I T INSTRUMENTATION LAB CAMBRIDGE, MASS
DRAWN R.D. Sullivan DATE 11/4/68
CHECKED
APPROVAL W.B. Farmer 10-8-68
APPROVAL
NASA APPROV. [illegible] 11/4/68
NASA APPROV. W.K. Taylor 10 DEC 68

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

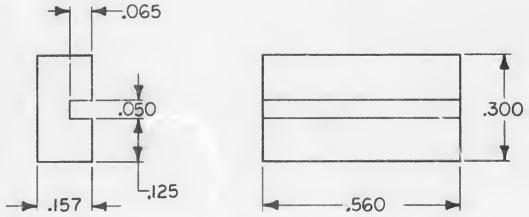
INSULATOR PHOTOGRAPHIC MASTER
CONTROL MODULE

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1004277
SCALE 4/1 | WT | SHEET 1 OF 1

1004277 B

1004279

REVISIONS 04147			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL.: PLASTIC, ACRYLIC PER MIL-P-5425 FINISH A
3. BREAK SHARP EDGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1003167	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN K. Butler DATE 2 Oct 63
CHECKED R. J. Kemp, Jury 22 Oct 63
APPROVAL W. R. Hamel 23 Oct 63
APPROVAL
NASA APPROVAL 10/24/63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

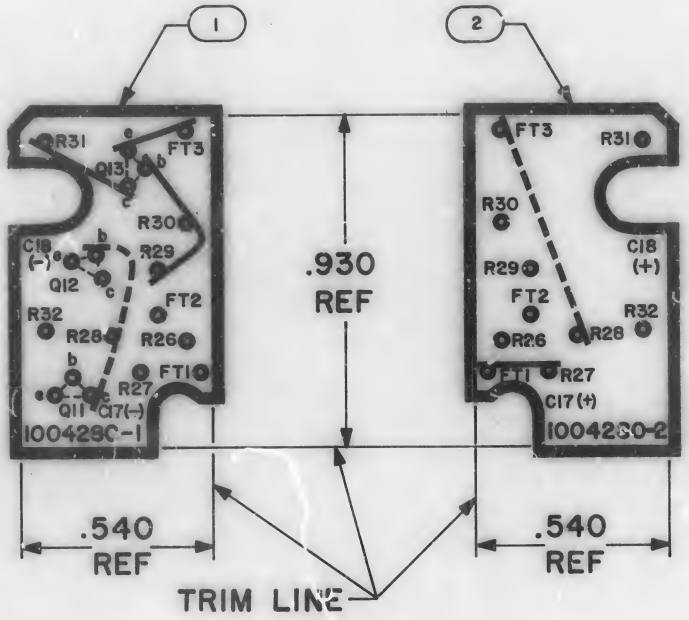
BLOCK, SPACER
STRAND GATE MODULE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004279
SCALE 4/1	WT	SHEET 1 OF 1

1004279

1004280

REVISIONS 04/47			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 04380	5 Nov 63	WK



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE 1A
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. CUT WITHIN .010 OF TRIM LINE
6. ⊙ .045/.050 DIA PUNCH ALL HOLES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1004280-2	INSULATOR	2
1	1004280-1	INSULATOR	1

LIST OF MATERIALS

1003183	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 3
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Ed Goldman DATE Oct 23, '63
CHECKED C. P. Chrisbury 22 Oct 63
APPROVAL [signature] 23 Oct 63
APPROVAL [signature]
NASA APPROVAL [signature]
MIT APPROVAL [signature] 24 Oct 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

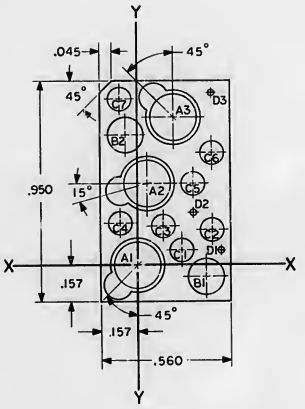
INSULATOR PHOTOGRAPHIC MASTER STRAND GATE MODULE

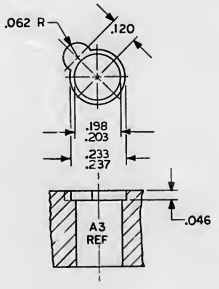
CODE IDENT NO	SIZE	NASA DRAWING NO.
	C	1004280
SCALE 4/1	WT	SHEET 1 OF 1

REVISIONS 04/47

SYM	DESCRIPTION	DATE	APPROVAL

HOLE IDENT	BASIC X DIM	BASIC Y DIM.	⌖ DIA	HOLE DIA	QTY
A1	.000	.000	.006	SEE DETAIL A	3
A2	.043	.350			
A3	.158	.635			
B1	.295	-.052	.006	.153 .157	2
B2	-.050	.558			
C1	.190	.062	.006	.100 .104	7
C2	.320	.150			
C3	.110	.165			
C4	-.075	.180			
C5	.240	.350			
C6	.320	.480			
C7	-.075	.712			
D1	.360	.062	.006	.023 .027	3
D2	.240	.222			
D3	.320	.740			





DETAIL A
SCALE 4/1
3 PLACES

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: PLASTIC, ACRYLIC PER MIL-P-5425, FINISH A
3. TRUE POSITION AS SHOWN IN CHART
4. BREAK ALL SHARP EDGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1003183	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±030
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN J.J. DATE 02 Dec 63
CHECKED D.P. Kingsbury 12 DEC 63
APPROVAL W.R. Woodward 2 DEC 63
APPROVAL
NASA APPROVAL W.J. Stupak DEC 27 1963
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

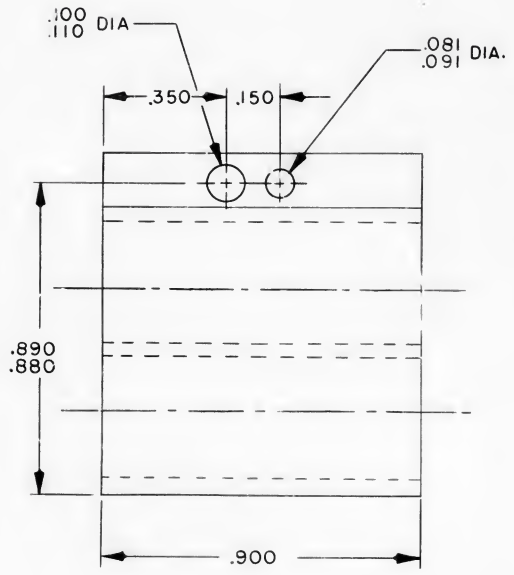
HOLDER, COMPONENT STRAND GATE MODULE

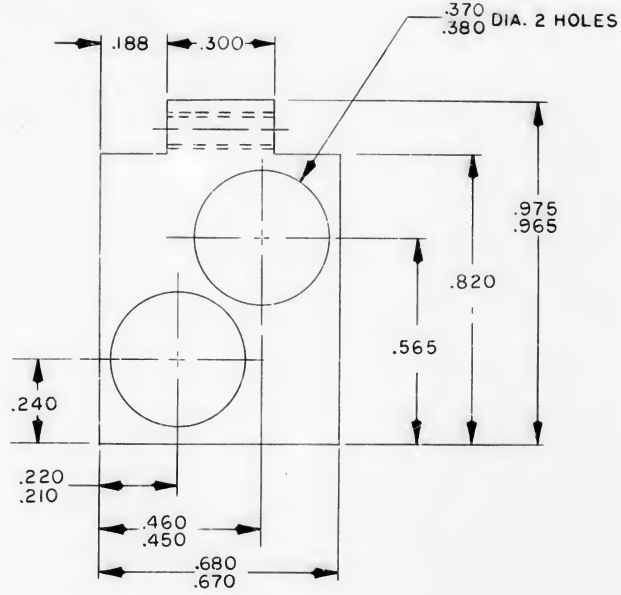
CODE IDENT NO.	SIZE	NASA DRAWING NO.
	D	1004281
SCALE 4/1	WT	SHEET 1 OF 1

1824001

1004283

REVISIONS 07670			
SYM	DESCRIPTION	DATE	APPROVAL





NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAT'L: PLASTIC ACRYLIC PER MIL-P-5425 FINISH B ALT; MIL-P-8184 FINISH B
3. BREAK SHARP EDGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1003206	1003167
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # DECIMALS ±.010 ANGLES ± #
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN J. Brigham DATE 7/3/64
CHECKED Jerome Adrian 15 APR 65
APPROVAL
APPROVAL Eldon C Hall 28 Apr 64
NASA APPROVAL [signature] 9/24/64
MIT APPROVAL [signature] 15 Sept 64

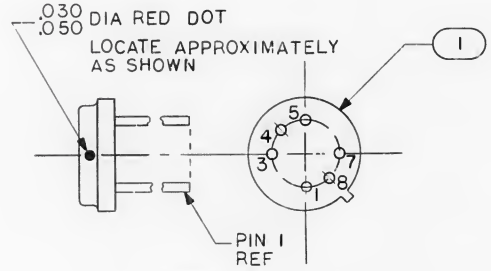
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

HOLDER, COMPONENT
STRAND GATE MODULE

CODE IDENT NO. —
SIZE C
NASA DRAWING NO. 1004283
SCALE 4/1
WT
SHEET 1 OF 1

1004283

REVISIONS						15103
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



GENERAL REQUIREMENT

UPON COMPLETION OF ALL REQUIREMENTS AS SPECIFIED IN ND 1002238, THE NOR-GATES FROM LOTS WHICH QUALIFY FOR FLIGHT HARDWARE UNDER THE PROVISIONS OF ND1002238 SHALL BE MARKED IN RED AS INDICATED IN THIS DOCUMENT.

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. IDENTIFY PER ND1002019
3. MATERIAL: MAKE FROM FIND NO.1

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1006771		MICRO-NOR GATE (TO 47 SIZE)	1

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 3

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN C. Addario Jr. 10 DEC 64
CHECKED
APPROVED
APPROVED Eldon C Hall 15 Dec 64
APPROVED MIT W Cuppler 23 Dec 64
APPROVED MSC W J Rhine 12 23 64
DATE

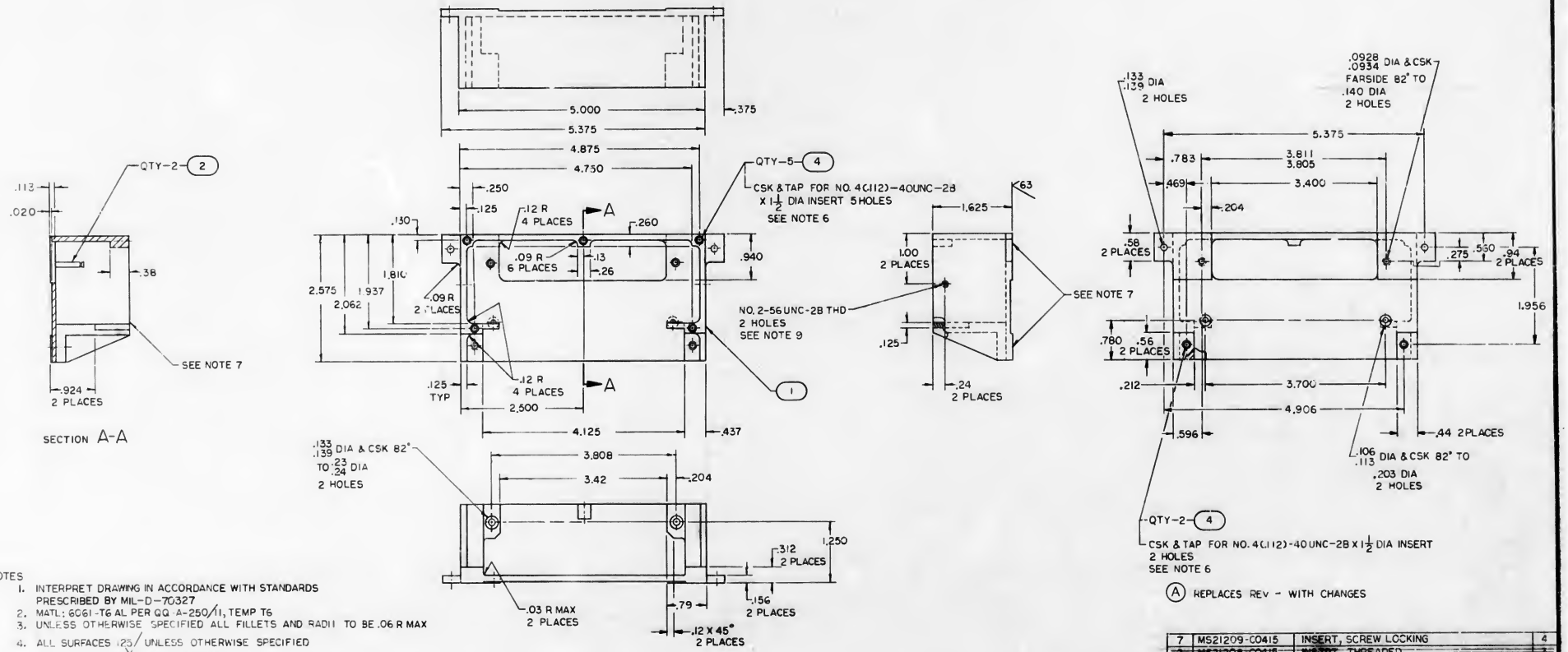
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MICRO-NOR GATE (TO 47)
(FLIGHT QUALIFIED)

CODE IDENT NO. —
SIZE C
DRAWING NO. 1004300
SCALE 5/1
SHEET 1 OF 1

1004001

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REPLACE REV - WITH CHANGES PER TDRR 21568			8/17/65	
B		REVISED PER TDRR 22168			11/15/65	
C		REVISED PER TDRR 24217			4/14/66	



NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: 6061-T6 AL PER QQ-A-250/11, TEMP T6
3. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII TO BE .06 R MAX
4. ALL SURFACES 125 UNLESS OTHERWISE SPECIFIED
5. REMOVE BURRS & SHARP EDGES .005/.020
6. INSTALL FIND NO.3 & FIND NO 4 PER M333646
7. THESE SURFACES TO BE CHROMATE PER MIL-C-5541 TYPE II, CLASS 3 BEFORE INSTALLATION OF FIND NO.3 & FIND NO.4
8. ANODIZE PER MIL-A-8625 TYPE I, DYED BLACK UNLESS OTHERWISE SPECIFIED
9. THESE HOLES TO BE FREE OF ANODIZE
10. IDENTIFY WITH PART NO. PER ND1002019

(A) REPLACES REV - WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
7	MS21209-C0415	INSERT, SCREW LOCKING	4
~~2~~	~~MS21208-C0416~~	~~INSERT, THREADED~~	~~3~~
2	1004867	PIN, GUIDE	2
1	1004315-001	FRAME	1

LIST OF MATERIALS

1003220	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ±1/64 DECIMALS .XX ±.02 ANGLES ±0°30'
.XXX ±.005
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

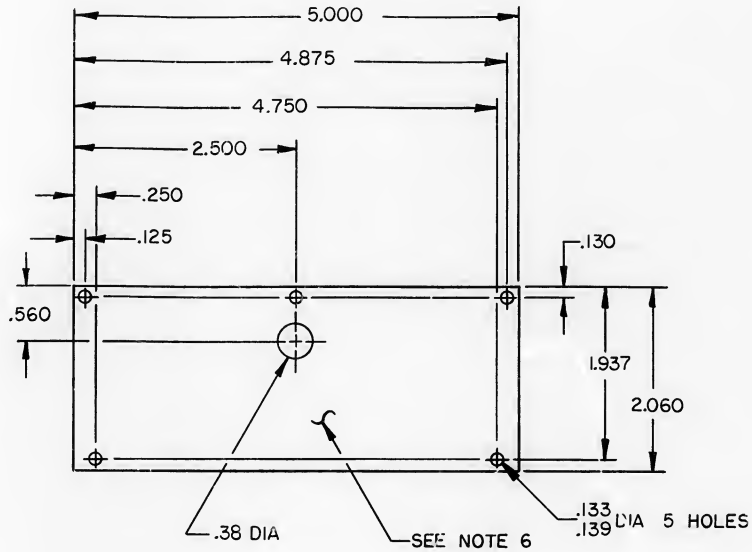
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	[illegible]	29 JUL 65
CHECKED	[illegible]	[illegible]
APPROVED	[illegible]	[illegible]
APPROVED		
APPROVED MIT	[illegible]	[illegible]
APPRO'D MSC	[illegible]	4/15/66

FRAME
G & N FAILURE DETECT

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 1004315
DATE | SCALE 1/1 | SHEET 1 OF 1

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
A		REPLACE REV – WITH CHANGES PER TDRR 21558			8/17/65



NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: 6061-T6 AL PER QQ-A-250/11 TEMP 6, .062 THK
3. REMOVE BURRS AND SHARP EDGES .005/.020
4. IDENTIFY WITH DRAWING NO. AND REVISION PER ND1002019
5. ANODIZE PER MIL-A-8625 TYPE I, DYED BLACK
6. CHROMATE SURFACE PER MIL-C-5541 TYPE II, CLASS 3

(A) REPLACES REV – WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1003220	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS XX ± .01 XXX ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

SEE NOTE 2

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN	J. Dewar	29 July 65
CHECKED	R F Barker	30 July 65
APPROVED	Albert Hopkins	30 July 65
APPROVED		
APPROVED MIT	W Kuffler	8 Aug 65
APPROVED MSC	J Whitsett	8/16/65

DATE

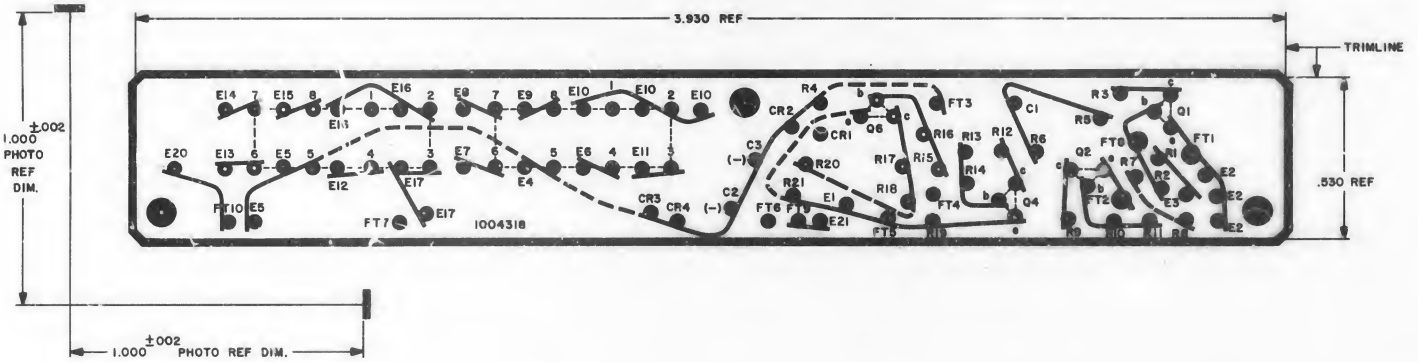
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COVER, TOP
G & N FAILURE DETECT

CODE IDENT NO.	SIZE	DRAWING NO.
80230	C	1004316

SCALE 1/1 SHEET 1 OF 1

REVISIONS 20407					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 21345	RDP	[illegible]	9/16/65	[illegible]
B		REVISED PER TDRR 22459	WDP	[illegible]	11/16/65	[illegible]



NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY
3. MAKE MASTER PATTERN POSITIVE FILM TO DIMENSIONS SHOWN
4. CUT TO WITHIN .010 OF TRIMLINE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1004318	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± —— DECIMALS ± —— ANGLES ± ——
DO NOT SCALE THIS DRAWING
MATERIAL

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

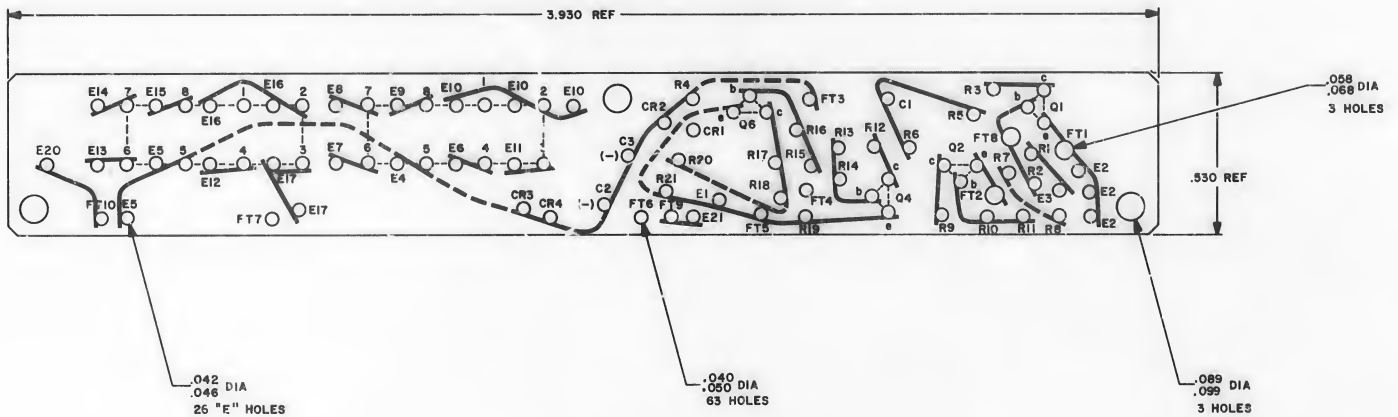
DRAWN	Ed Pavarini	9-15-65
CHECKED	[illegible]	9-15-65
APPROVED		
APPROVED	[illegible]	9-15-65
APPROVED MIT	[illegible]	11-16-65
APPROVED MSC	[illegible]	11/16/65

PHOTOGRAPHIC MASTER
WIRING BOARD, A
G & N FAILURE DETECT

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 1004317
DATE | SCALE 5/1 | SHEET 1 OF 1

1004317

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 21545	[illegible]	[illegible]	[illegible]	[illegible]
B		REVISED PER TDRR 22459	KJD	[illegible]	[illegible]	[illegible]



NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: PLASTIC SHEET .031 THICK PER MIL-P-188177 TYPE GEE
3. PREPARE BOARD FOR PHOTOGRAPHY PER ND 1002133
4. ~~MARK BLACK CHARACTERS PER ND1002019~~
5. BROKEN LINE DENOTES SLEEVING
6. IDENTIFY WITH DRAWING NO. AND REVISION PER ND1002019

REF: DRAWING NO. 1004317 FOR PHOTOGRAPHIC MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
			LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL: SEE NOTE 2

1003218 | NEXT ASSY | USED ON | APPLICATION

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

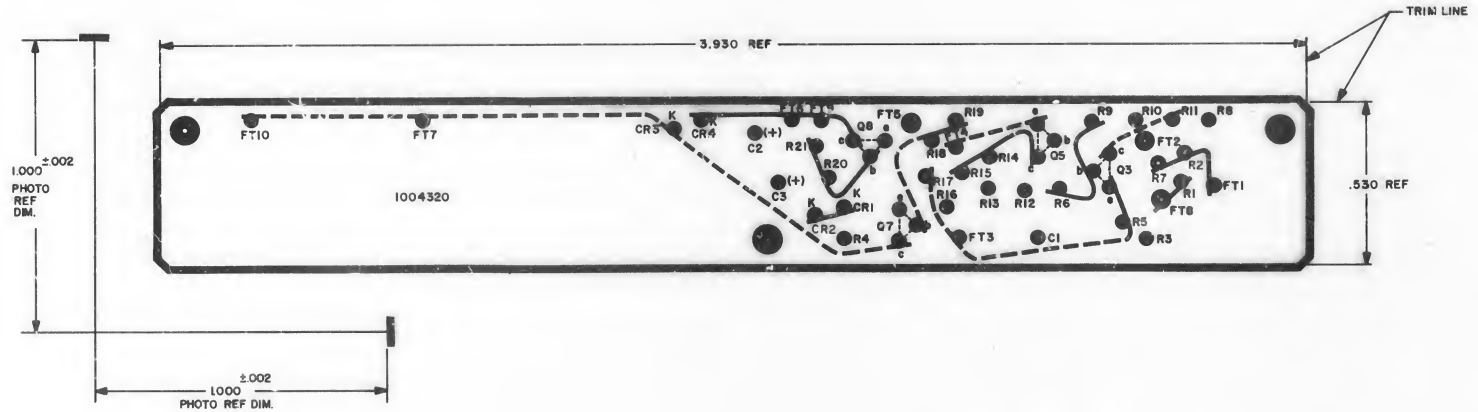
DRAWN	Ed Pagano	29 Dec 66
CHECKED	[illegible]	[illegible]
APPROVED		
APPROVED	[illegible]	28 Dec 66
APPROVED MIT	[illegible]	6 DEC 66
APPROVED MSC	[illegible]	6 DEC 66

WIRING BOARD, A
G & N FAILURE DETECT

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 1004318

DATE | SCALE 5/1 | SHEET 1 OF 1

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 21345				
B		REVISED PER TDRR 22459				



NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY
3. MAKE MASTER PATTERN POSITIVE FILM TO DIMENSIONS SHOWN
4. CUT TO WITHIN .010 OF TRIM LINE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES IN
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL

NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN
CHECKED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

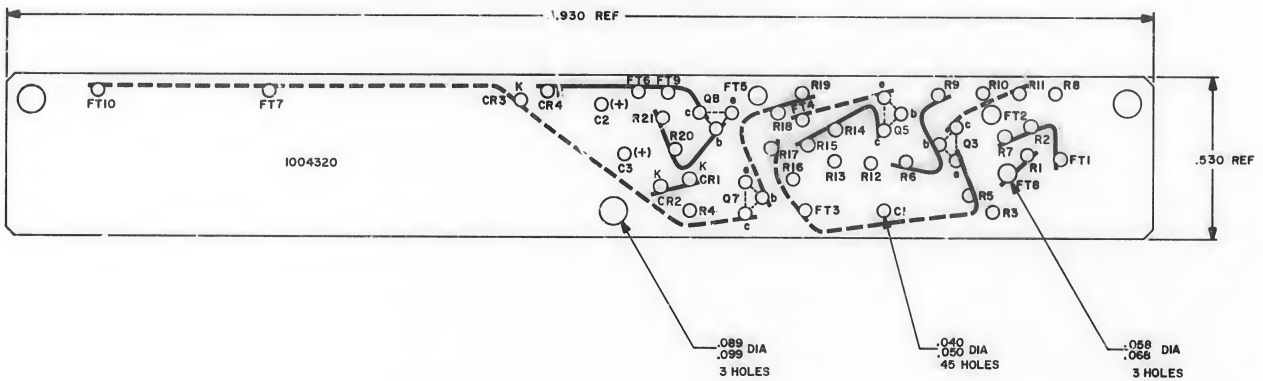
PHOTOGRAPHIC MASTER
WIRING BOARD, B
G&N FAILURE DETECT

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 1004319

SCALE 5/1 | SHEET 1 OF 1

1004319

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	APPROVED
A		REVISED PER TDRR 21345	RPR	RPR 9/6/61	9/6/61
B		REVISED PER TDRR 22459	WB	WB 9/6/61	9/6/61



NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: PLASTIC SHEET .031 THICK PER MIL-P-18177 TYPE GEE
3. PREPARE BOARD FOR PHOTOGRAPHY PER ND 1002133
4. ~~MARK BLACK CHARACTERS PER ND1002019~~
5. BROKEN LINES DENOTES SLEEVING
6. IDENTIFY WITH DRAWING NO. AND REVISION PER ND1002019

REF: DRAWING NO. 1004313 FOR PHOTOGRAPHIC MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
			LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL: SEE NOTE 2

1003217
NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

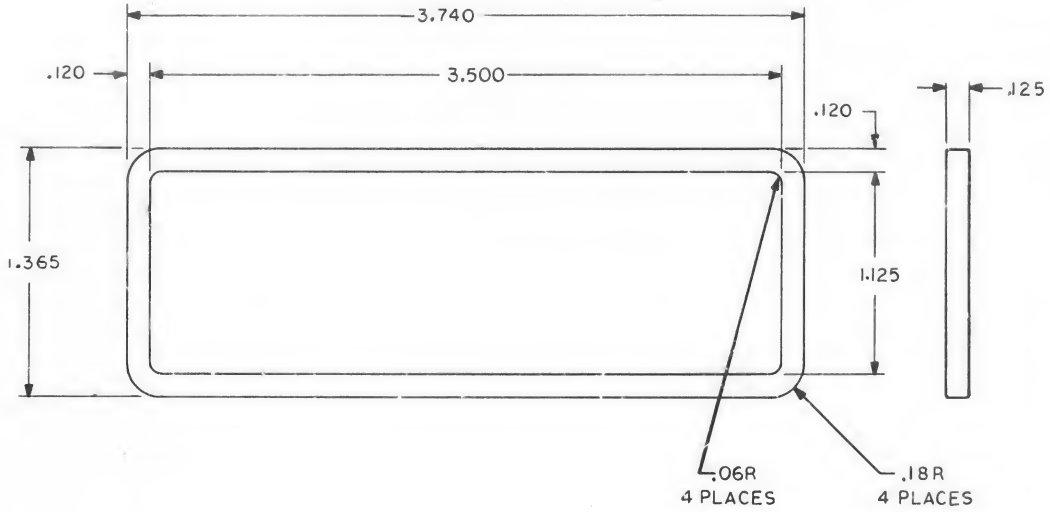
DRAWN	R P Ramsey	9/6/61
CHECKED	[illegible]	9/6/61
APPROVED	[illegible]	[illegible]
APPROVED	Edward Hall	9/6/61
APPROVED MIT	A G Mackey	6/26/61
APPROVED MSC	[illegible]	9/6/61

WIRING BOARD, B
G&N FAILURE DETECT

CODE IDENT NO 80230 | SIZE D | DRAWING NO. 1004320

DATE | SCALE 5/1 | SHEET 1 OF 1

REVISIONS TDAA 32254					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: WHITE SILICONE RUBBER PER MIL-R-5847, CLASS II, GRADE 50
3. IDENTIFY WITH PART NO. PER ND1002019

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1003230	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ±.010 XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN	A. Addorisio Jr	5 OCT 66
CHECKED	[illegible]	10CT66
APPROVED		
APPROVED	Eldon C Hall	21 Oct 66
APPROVED CCB		
APPROVED MSC	[illegible]	10/25/66

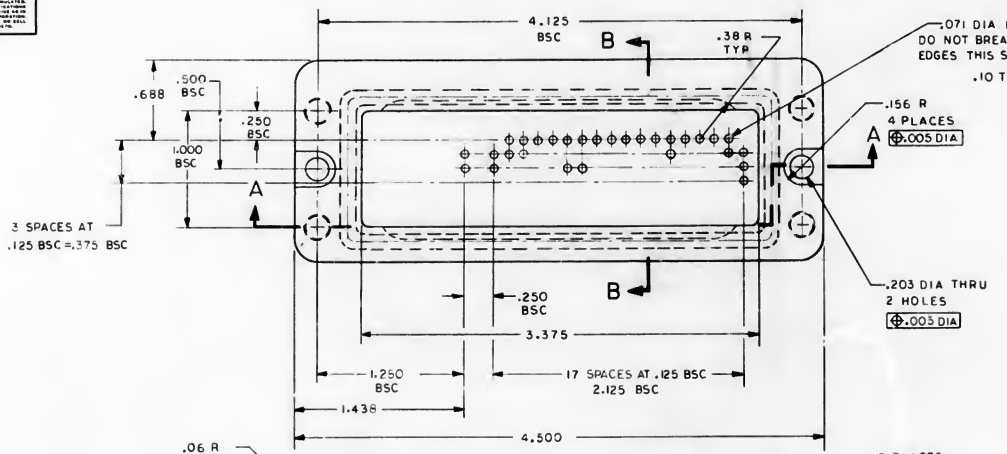
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

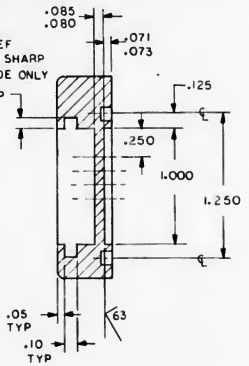
GASKET
TEST CONNECTOR

CODE IDENT NO.	SIZE	DRAWING NO.
80230	C	1004322

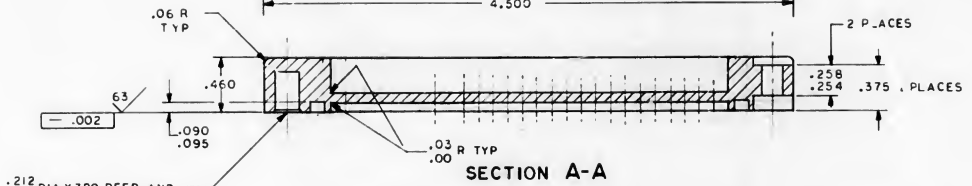
SCALE 2/1 | SHEET 1 OF 1

1004322 -



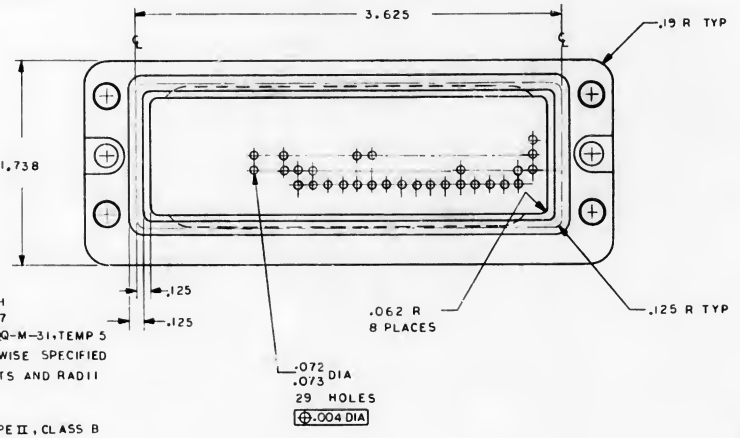


SECTION B-B



SECTION A-A

.212
.216 DIA X .380 DEEP AND CSK 100° X .230 DIA
4 HOLES
.006 DIA



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: MAGNESIUM ZK60A-T5 PER QQ-M-31, TEMP 5
3. ALL SURFACES TO BE 125 UNLESS OTHERWISE SPECIFIED
4. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII TO BE .015/.005
5. REMOVE BURRS AND SHARP EDGES
6. FINISH: ANODIZE PER MIL-M-45202, TYPE II, CLASS B
7. IDENTIFY WITH PART NO. PER ND 1002019

REVISIONS TPM 32251

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
			LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
.XX ±.01 ±
.XXX ±.005
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

1003231
NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN S.L. Eckert 10-25-66
CHECKED R.J. Kingsbury 11 nov 66
APPROVED
APPROVED Elden C. Hall 11 nov 66
APPROVED CCA 11/14/66
APPROVED MSC DATE

FRAME
TEST CONNECTOR

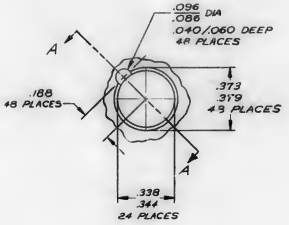
CODE IDENT NO 80230 | SIZE D | DRAWING NO 1004323
SCALE 2/1 | SHEET 1 OF 1

1004323

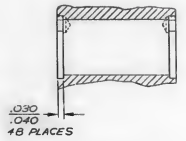
1004500

SYM	REVISIONS DESCRIPTION
A	REVISED PER TDR 2
B	REVISED PER TDR 1

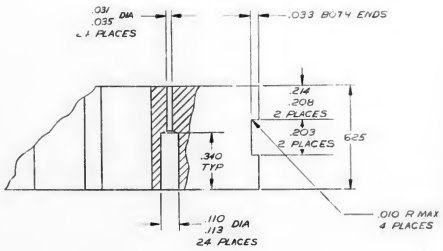
HOLE IDENT	X1 BASIC DIM	Y1 BASIC DIM.
A1	.000	.000
A2	.410	.000
A3	.820	.000
A4	1.120	.280
A5	1.483	.000
A6	1.893	.000
A7	2.303	.000
A8	2.603	.280
A9	2.966	.000
A10	3.376	.000
A11	3.786	.000
A12	4.096	.280
A13	4.449	.000
A14	4.859	.000
A15	5.269	.000
A16	5.569	.280
A17	5.932	.000
A18	6.342	.000
A19	6.752	.000
A20	7.052	.280
A21	7.415	.000
A22	7.825	.000
A23	8.235	.000
A24	8.535	.280
B1	-.087	.272
B2	-.087	.414
B3	.820	.272
B4	.820	.414
B5	1.396	.272
B6	1.396	.414
B7	2.303	.272
B8	2.293	.414
B9	2.879	.272
B10	2.879	.414
B11	3.786	.272
B12	3.786	.414
B13	4.362	.272
B14	4.362	.414
B15	5.269	.272
B16	5.269	.414
B17	5.845	.272
B18	5.845	.414
B19	6.752	.272
B20	6.752	.414
B21	7.328	.272
B22	7.328	.414
B23	8.235	.272
B24	8.235	.414

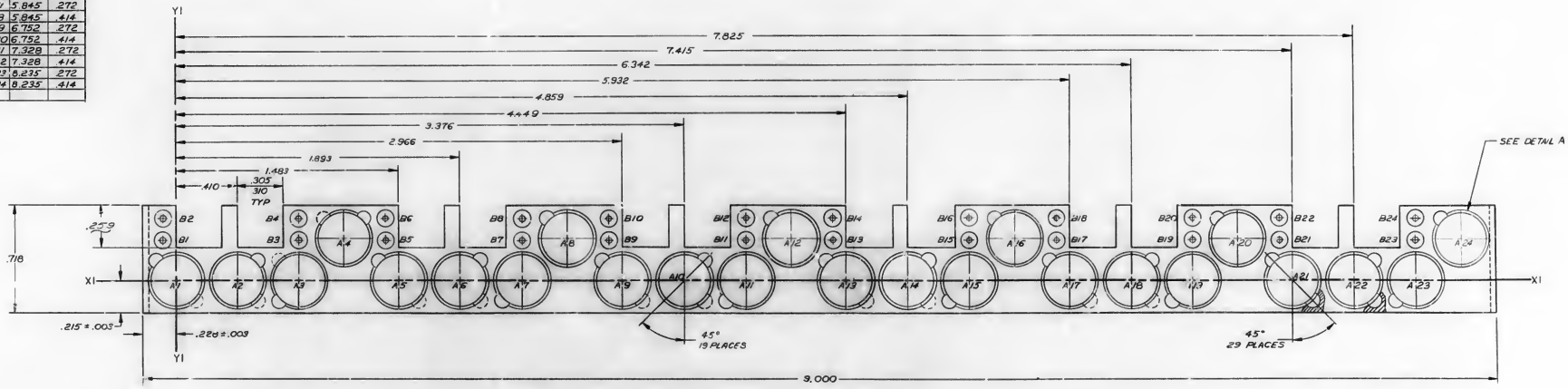


DETAIL A



SECTION A-A





NOTES
1. MATL: PLASTIC CLEAR ACRYLIC PER MIL-P-8184 FINISH B, ALT. MIL-P-5425B FINISH B.
2. ALL HOLES ⌖ .010 (M) DIA
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4. REMOVE ALL BURRS AND SHARP EDGES.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	MIT INSTRUMENTATION LAB Cambridge, Mass.	QTY REQD	PART OR IDENTIFYING NO.
		TOLERANCES ON FRACTIONS DECIMALS ANGLES ± .005 ± 3°	DRAWN B.L. Hyde DATE 6/8/62		MANNED SPACE
		DO NOT SCALE THIS DRAWING	CHECKED		COMP
		MATERIAL SEE NOTE 1	APPROVAL		CURR
		HEAT TREATMENT NONE	APPROVAL		
1003152		FINAL FINISH NONE	NASA APPROVAL	CODE IDENT NO.	J
NEXT ASSY	USED ON		MIT APPROVAL	SCALE 4/1	
APPLICATION			MIT APPROVAL		

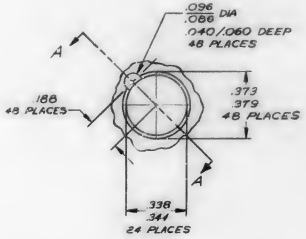
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1004500B

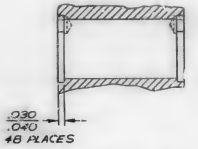
INCHES

1004500

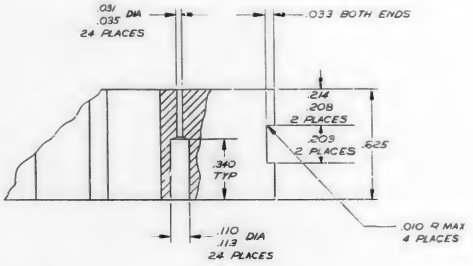
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	REVISED PER TDRR		
B	REVISED PER TDRR 04467		

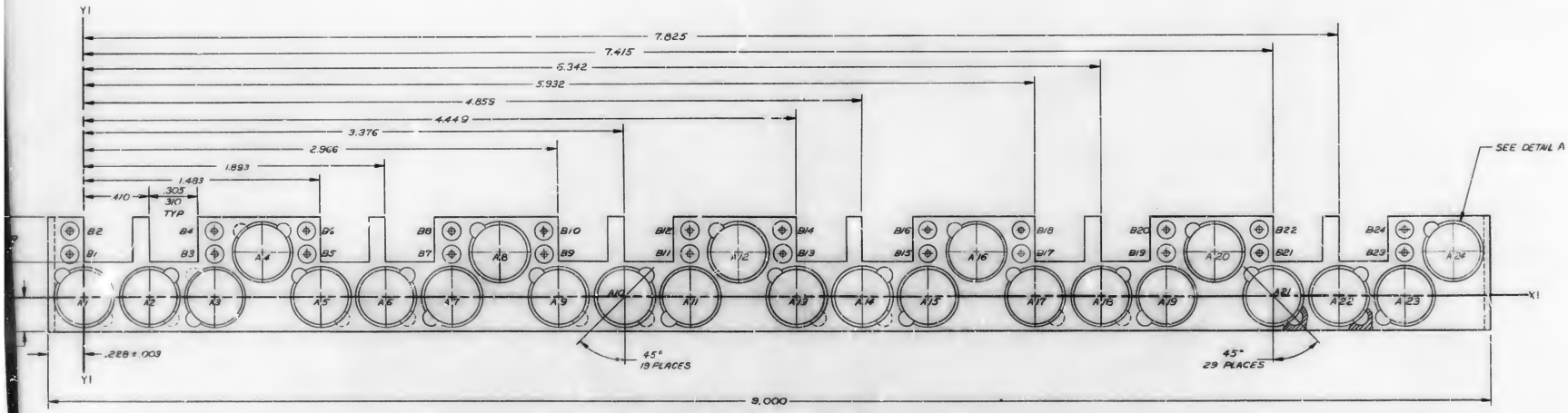


DETAIL A



SECTION A-A





...AR ACRYLIC PER MIL-P-8184 FINISH B,
...INISH B.
...DIA.
...WING IN ACCORDANCE WITH STANDARDS
... MIL-C 70327.
...RS AND SHARP EDGES

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIAL	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS .005 ANGLES ± 3° DO NOT SCALE THIS DRAWING MATERIAL SEE NOTE 1 HEAT TREATMENT NONE FINISH NONE	M.I.T. INSTRUMENTATION LAB DRAWN DATE CHECKED APPROVAL APPROVAL NASA APPROVAL MIT APPROVAL MIT APPROVAL
1003152	NEXT ASSY	USED ON APPLICATION	

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

COMPONENT HOLDER
CURRENT SWITCH

CODE IDENT NO	SIZE	NASA DRAWING NO
	J	1004500
SCALE 4/1	WT	SHEET 1 OF 1

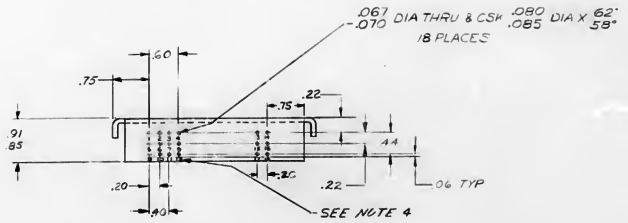
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

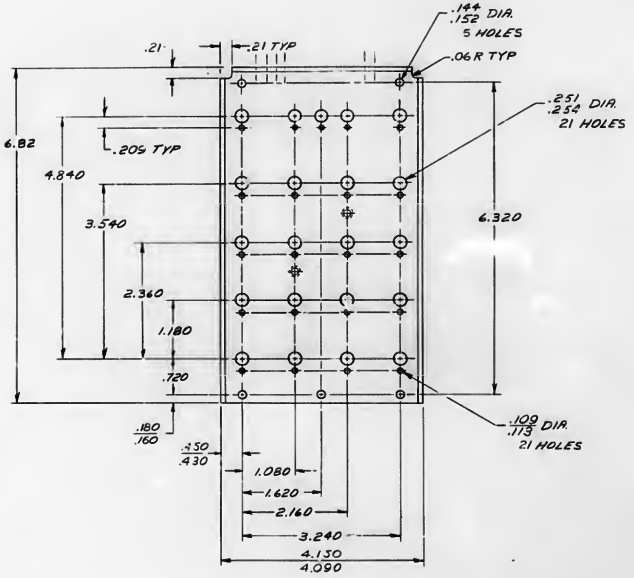
1004500 B

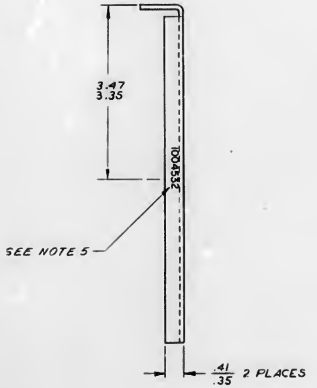
1004500

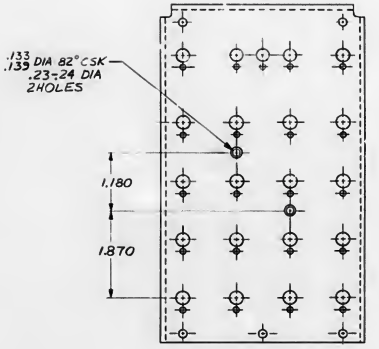
REVISIONS 02555

SYM	DESCRIPTION	DATE	APPROVED
A	REVISED PER TDRR 03458		
B	REVISED PER TDRR 04677		
C	REVISED PER TDRR 05188		









NOTES:
1. MATL: .090 THK AL 5052-H32 PER QQ-A-318, TEMPER H32
2. REMOVE BURRS & SHARP EDGES
3. ANODIZE PER MIL-A-8625 TYPE II DYED BLACK
4. MARK .CB HIGH WHITE PER ND1002019 APPROX WHERE SHOWN
5. MARK .12 HIGH WHITE PER ND1002019
6. ALL BEND R $^{.05}_{.09}$

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± DECIMALS ANGLES ± .02 ± .005
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT
FINAL FINISH SEE NOTE 3

1003097 NEXT ASSY | USED ON | APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.
DRAWN 80 Clayton DATE 5-1-68
CHECKED [illegible] 6 May 68
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PANEL, FRONT
KEYBOARD MODULE
AGC, DSKY NAV & MAIN

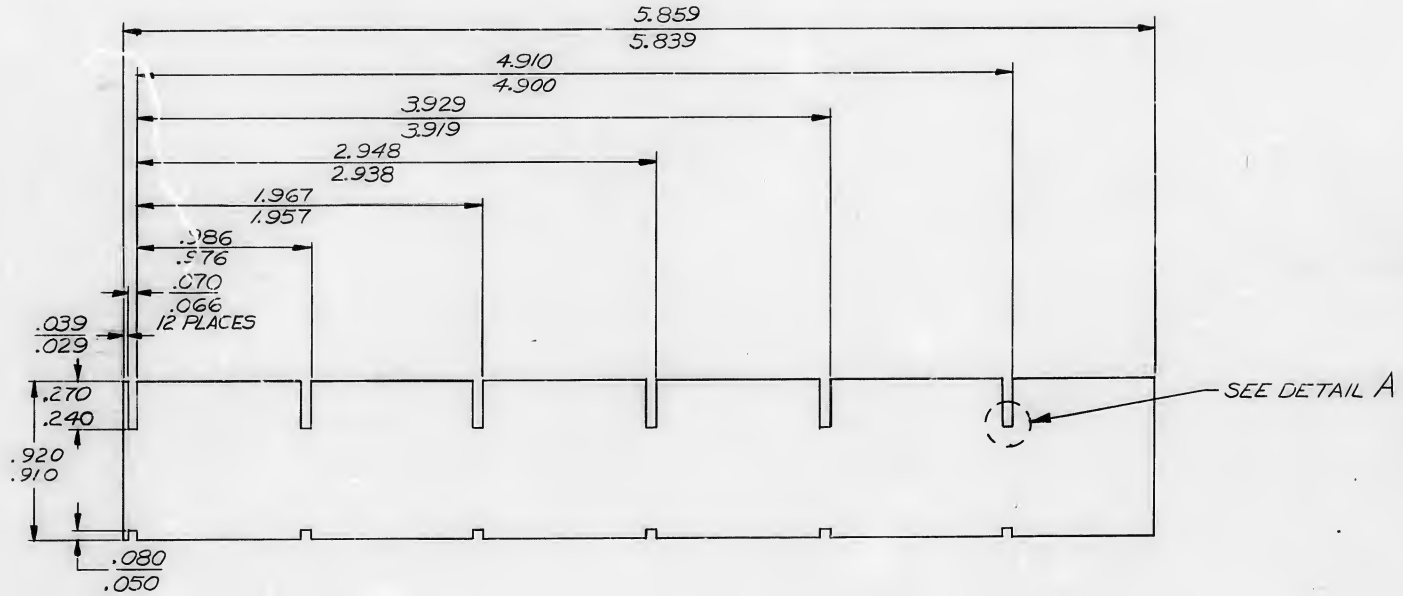
CODE IDENT NO ——— | SIZE F | NASA DRAWING NO 1004532
SCALE 1/1 | WT | SHEET 1 OF 1

1004532

1004533

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	CLASS A RELEASE PER TDRR 02918	9/5/63	JM

DETAIL A
SCALE 10/1



NOTES
1. MATL: .015 THICK PLASTIC SHEET, PER MIL-P-18177 TYPE GEE, EXCEPT THICKNESS TOL ±.003
2. REMOVE BURRS AND SHARP EDGES
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1003098	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT NONE
FINAL FINISH NONE

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN Ben Barnett DATE 20 AUG 63
CHECKED R T Bond 26 Aug 63
APPROVAL E Johnson 28 Aug 63
APPROVAL Ellen C Hall 5 Sept 63
NASA APPROVAL K Mitchell 9/5/63
MIT APPROVAL
MIT APPROVAL L Hobyl 9/5/63

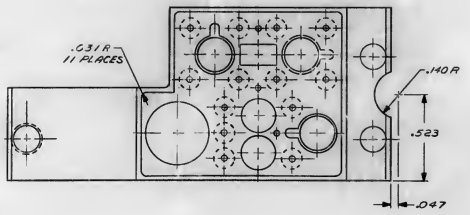
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

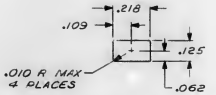
STRIP, BACKING
RELAY MODULE ASSEMBLY

CODE IDENT NO.	SIZE	NASA DRAWING NO.
———	C	1004533
SCALE 2/1	WT	SHEET 1 OF 1

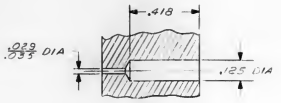
1004533

HOLE IDENT	XI BASIC DIM.	YI BASIC DIM.	⊕ DIA	HOLE DIA
A1	.070	.650	.010	.375
B1	.414	.532		.204 .210
B2	.414	.766		
C1	.000	.000		
C2	.297	.000		
C3	.524	.000		
C4	.820	.000		
C5	.000	.313		
C6	.297	.313		SEE SECTION B-B
C7	.524	.313		
C8	.820	.313		
C9	.211	.492		
C10	.615	.492		
C11	.211	.650		
C12	.211	.805		
C13	.615	.805		
D1	.149	.156		SEE
D2	.672	.156		DETAIL
D3	.756	.650		B
E1	.414	.156		SEE DET A
F1	.414	.000		.139 .035
F2	.414	.363		
F3	.524	.650	.010	

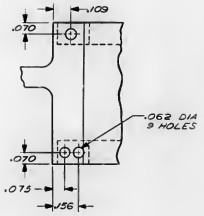




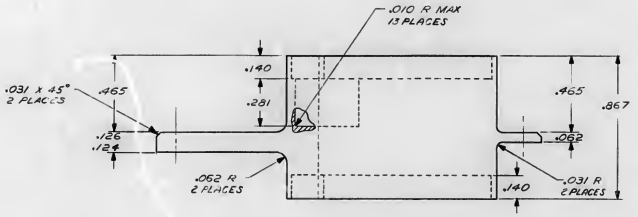
DETAIL A

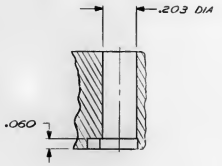


SECTION B-B
13 HOLES MARKED C

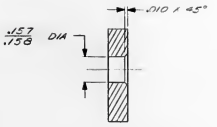


VIEW A-A



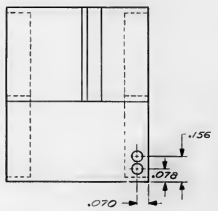


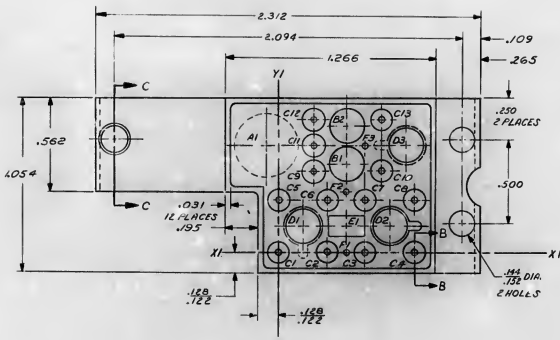
SECTION A-A

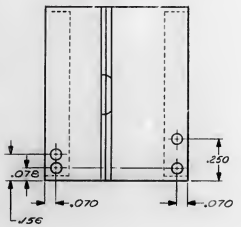


SECTION C-C

DETAIL B
3 HOLES MARKED D







A A

NOTES
1. MATL: G-10 PLASTIC SHEET PER MIL-P-18177 TYPE GEE
2. REMOVE SHARP EDGES

REVISIONS	
QTY	DESCRIPTION
--	CLASS A RELEASE PER TDRR

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ±.005 ±0°30'
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT NONE
FINAL FINISH NONE
NEXT ASSY USED ON
APPLICATION

MIT INSTRUMENTATION LAB Cambridge, Mass.

DRN Y. [illegible] DATE MAR 63
CHECKED R. Baker 3 Sep 63
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT C
HOUSTON, TEXAS

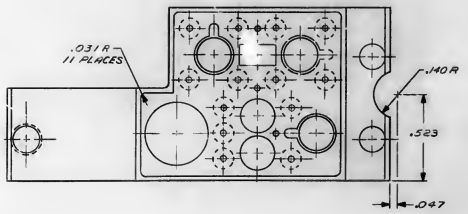
HOLDER, COMP
AGC POWER STAGE U

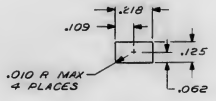
CODE IDENT NO. 71324 SIZE J
SCALE 4/1 WT

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

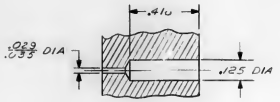
SYM	REVISIONS DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASE PER TDRR 25,35		

HOLE IDENT	X1 BASIC DIM.	Y1 BASIC DIM.	⊕ DIA		HOLE DIA
A1	-.070	.650	.010		.375
E1	.414	.532			.204 .210
B2	.819	.766			
C1	.000	.000			
C2	.297	.000			
C3	.524	.000			
C4	.820	.000			
C5	.000	.313			SEE SECTION B-B
C6	.297	.313			
C7	.524	.313			
C8	.820	.313			
C9	.211	.492			
C10	.618	.492			
C11	.211	.650			
C12	.211	.805			
C13	.618	.805			
D1	.149	.156			SEE DETAIL B
D2	.672	.156			
D3	.736	.930			
E1	.414	.156			SEE DET A
F1	.414	.000			
F2	.414	.363			.039 .035
F3	.524	.650	.010		

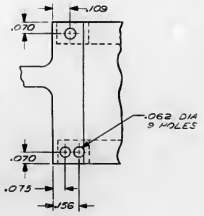




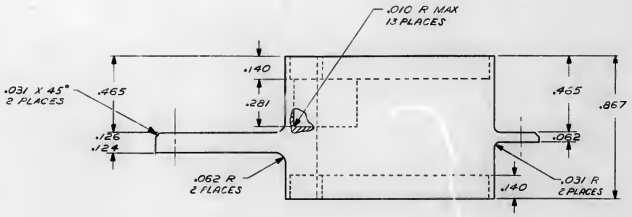
DETAIL A

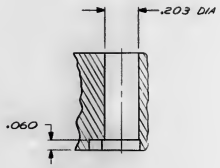


SECTION B-B
13 HOLES MARKED C

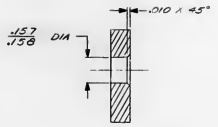


VIEW A-A

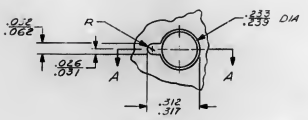




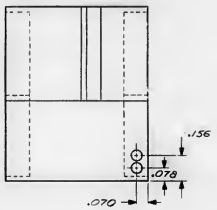
SECTION A-A

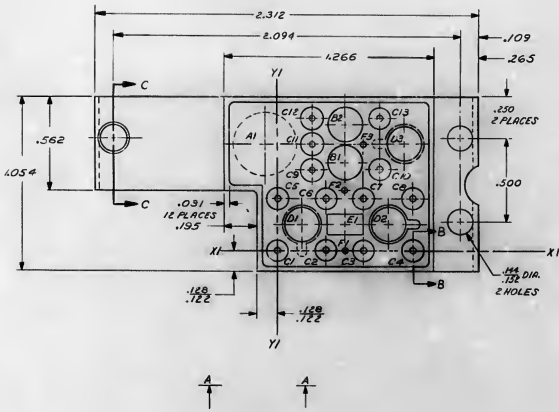


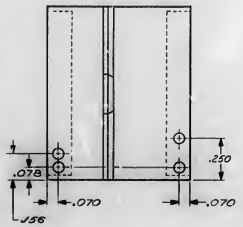
SECTION C-C



DETAIL B
3 HOLES MARKED D







ES
1. MAT'L: G-10 PLASTIC SHEET PER MIL-P-18177 TYPE GEE
2. REMOVE SHARP EDGES

QTY REQ	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS DECIMALS ANGLES ± .005 ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT NONE
FINISH NONE
NEXT ASSY | USED ON | APPLICATION

MIT INSTRUMENTATION LAB Customer Test Equipment
DRAWN [illegible] DATE 9/1/65
CHECKED R. Eckert 29 Sep 65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

HOLDER, COMPONENT
AGC POWER STAGE OSCILLATOR

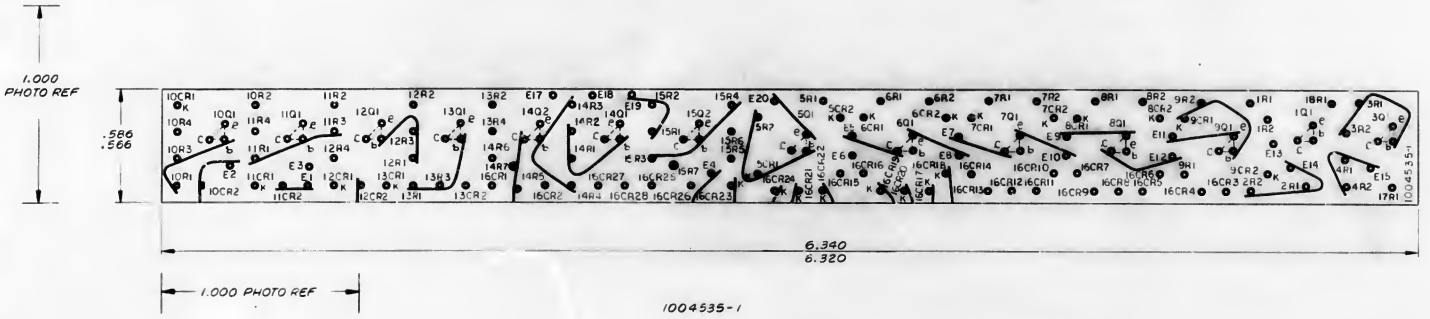
CODE IDENT NO. —— | SIZE J | NASA DRAWING NO. 1004534
SCALE 4/1 | WT | SHEET 1 OF 1

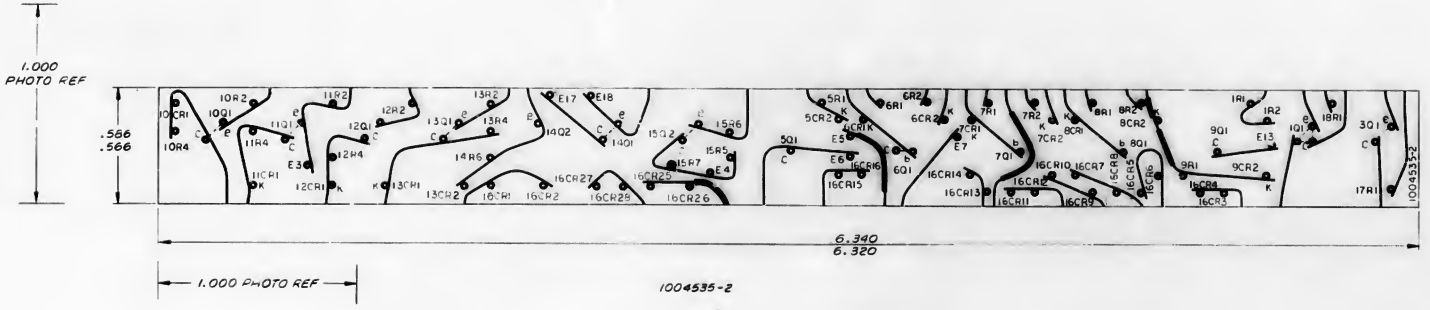
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1004534

1004535 C 2

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	REVISED PER TDRR 5V33V	4/1/64	[illegible]
B	REVISED PER TDRR 05778	4/24/64	[illegible]
C	REVISED PER TDRR 07498	7/1/64	[illegible]
	DR C. Sommer CHK A.B. Chasen		





NOTES

1. MATL: .006/.008 THICK PLASTIC SHEET, SENSITIZED DIMENSIONALLY STABLE PEP L-F-340 TYPE IB, CLASS II, STYLE IA
2. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER FOOT
4. ⊙ DENOTES .038 / .042 DIA HOLES THRU PLASTIC SHEET

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT NONE
FINAL FINISH NONE
1003530 | NEXT ASSY | USED ON | APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

M.I.T. INSTRUMENTATION LAB Cambridge Mass.

MANNED SPACECRAFT CENTER HOUSTON TEXAS

DRAWN [illegible] DATE 20 APR 65
CHECKED A.R. Boone 20 APR 65
APPROVAL T.J. Sarro 7/9/65
APPROVAL W.D. Turner 7/9/65
APPROVAL
NASA APPROVAL W.J. Kelly 10-7-65
MIT APPROVAL
MIT APPROVAL [illegible]

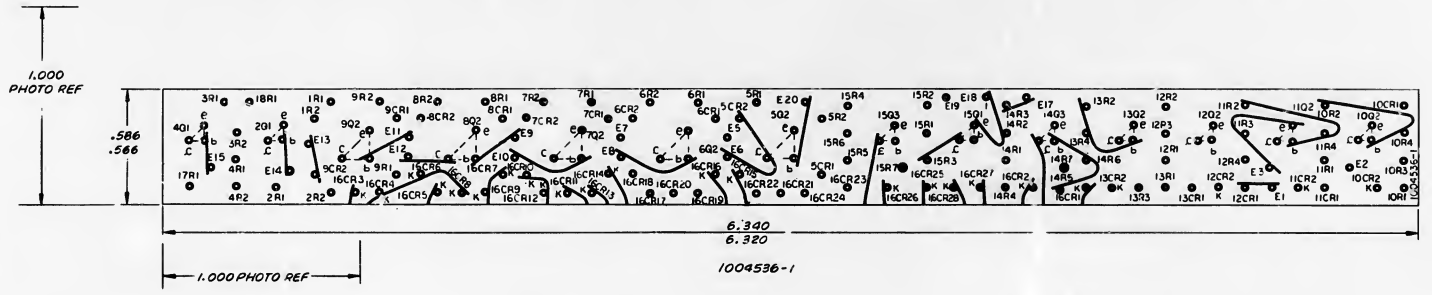
INSULATOR DECODING MODULE AGC DSKY NAV & MAIN

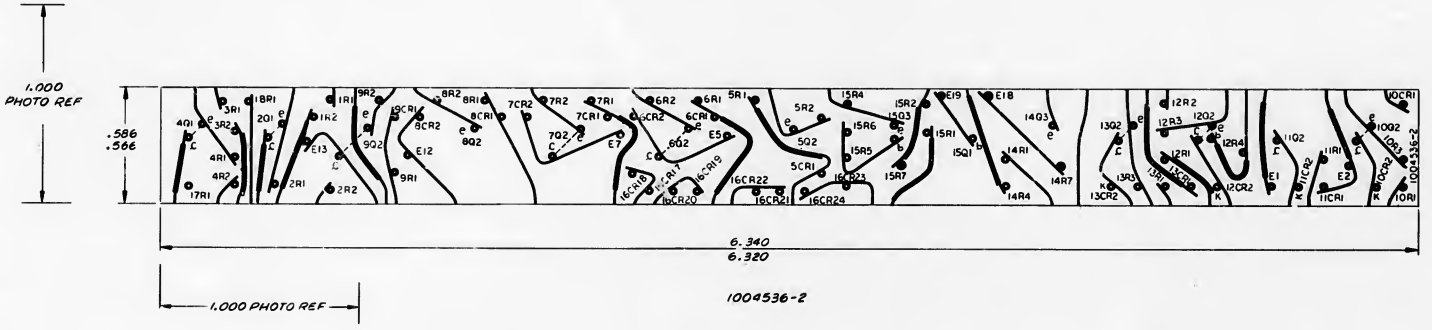
CODE IDENT NO —— | SIZE F | NASA DRAWING NO 1004535
SCALE 4/1 | WT | SHEET 1 OF 1

1004535 C

REVISIONS 0362 1

SYM	DESCRIPTION	DATE	APPROVED
A	REVISED PER TDRA 04334	7-10-64	[illegible]
B	REVISED PER TDRA 05267	10-6-64	[illegible]
C	REVISED PER TDRA 07498 DR Zimmerman CHK RWE EL-2	4/2/65	[illegible]
D	REVISED PER TDRA 13114 DR [illegible] CHK [illegible]	9/13/65	[illegible]





NOTES
1. MATL: .006/.008 THICK PLASTIC SHEET, SENSITIZED DIMENSIONALLY STABLE PER L-F-340 TYPE IB, CLASS II, STYLE IA
2. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER FOOT
4. ⊙ DENOTES .038 / .042 DIA HOLES THRU PLASTIC SHEET

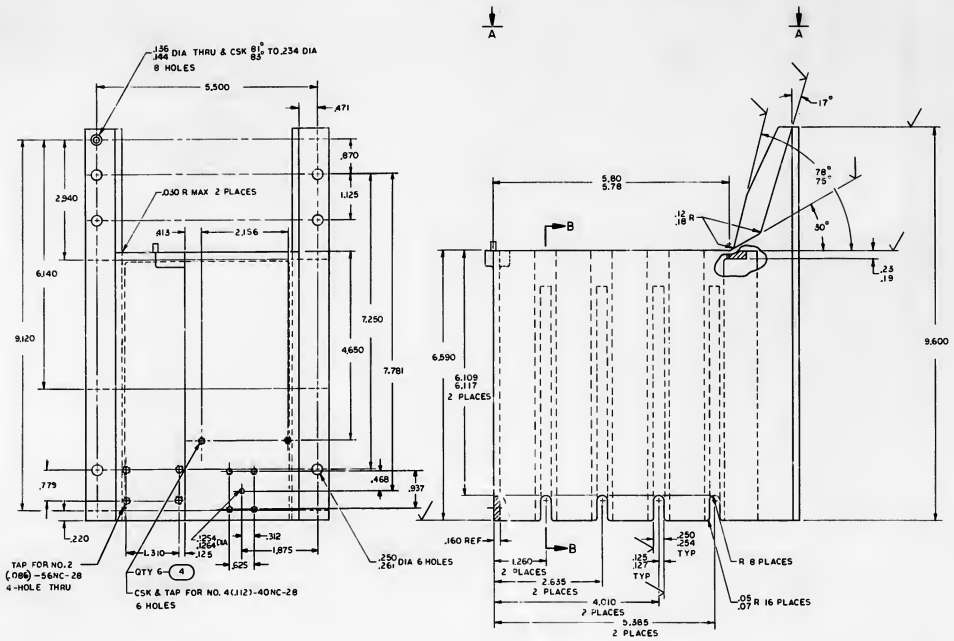
QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		LIST OF MATERIALS	

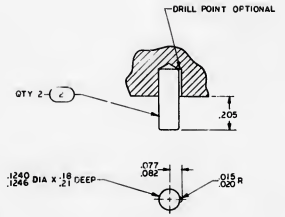
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB Cambridge, Mass.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN ES Dorsey DATE 9-14-65	INSULATOR
MATERIAL SEE NOTE 1	CHECKED [illegible] 26AUG65	DECODING MODULE
HEAT TREATMENT NONE	APPROVAL [illegible] 9/14/65	AGC DSKY, NAV&MAIN
FINAL FINISH NONE	APPROVAL [illegible] 26AUG65	
1003530 / NEXT ASSY / USED ON / APPLICATION	NASA APPROVAL [illegible] 10-2-65	CODE IDENT NO — / SIZE F / NASA DRAWING NO 1004536
	MIT APPROVAL [illegible]	SCALE 4/1 / WT / SHEET 1 OF 1
	MIT APPROVAL [illegible]	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

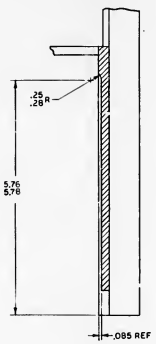
1004536 D

REVISIONS				
LTR	DESCRIPTION	DATE	APPD	
B	REDRAW REPLACES REV A WITH CHANGES PER TDRR 05377			
C	REVISED PER TDRR 05586			
D	REVISED PER TDRR 06146			
E	REVISED PER TDRR 07839 DR			

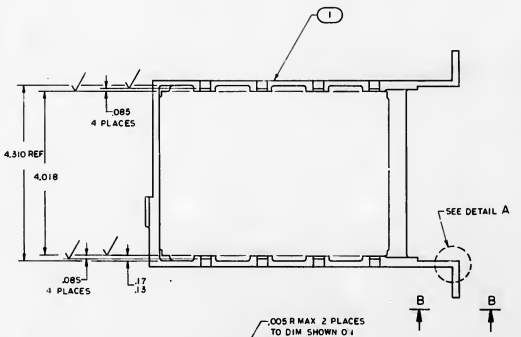




DETAIL B

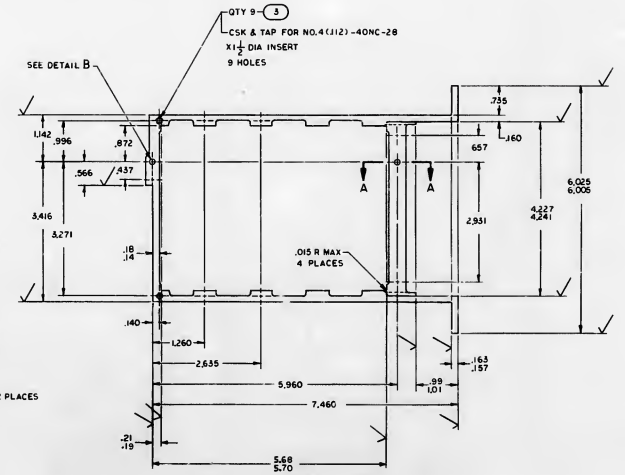


SECTION B-B
8 PLACES

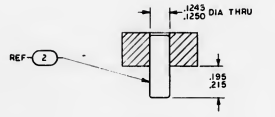


DETAIL A
SCALE 4/1

VIEW B-B



VIEW A-A



SECTION A-A

8 REPLACES REV A WITH CHANGE

NOTES
1. MATL MAKE FROM DWG NO. 1004561
2. SURFACES MARKED √ TO BE 125 √
3. REMOVE BURRS AND SHARP EDGES
4. ANODIZE PER MIL-A-8625, TYPE I, DYE BLACK

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
6	MS21208-CC410	INSERT SCREW THREAD	4
9	MS21209-CC415	INSERT, SCREW THREAD LOCKING	3
2	AN122692	PIN, DOWEL	2
1	1004539-1	HOUSING	1

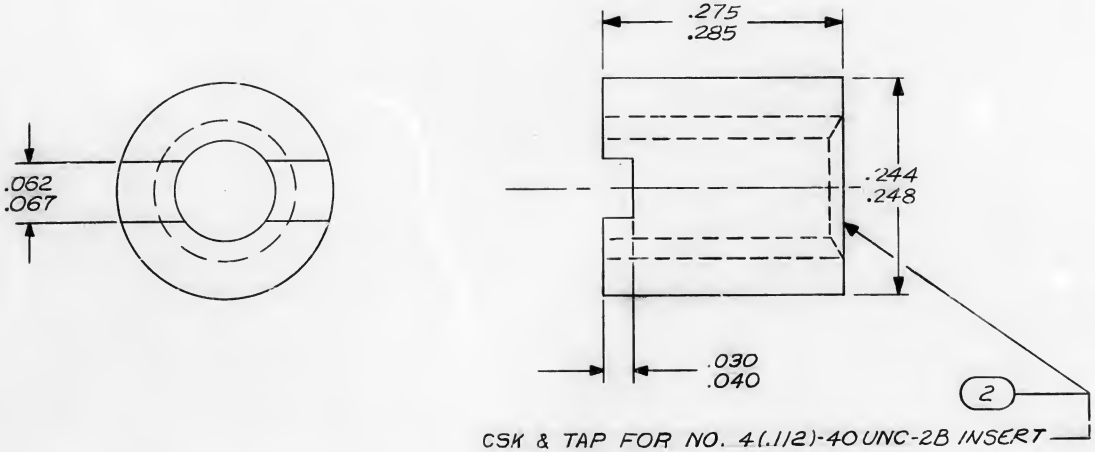
LIST OF MATERIALS

SEE NOTE 1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS .005 ANGLES ±2° 0	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING	DRAWN G. Cannon 11/5/62 CHECKED [illegible] 11/5/62 APPROVAL [illegible]	HOUSING, RELAY MODULE AGC DSKY, NAV	
MATERIAL SEE NOTE 1	NASA APPROVAL [illegible]		
HEAT TREATMENT NONE	LIT APPROVAL [illegible]	CODE IDENT NO. J	SIZE NASA DRAWING NO. 1004539
FINAL FINISH SEE NOTE 4	INT APPROVAL [illegible]	SCALE 1/1 WT	SHEET 1 OF 1
1003524 NEXT ASSY	USED ON APPLICATION		

1004540

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	CLASS A RELEASE PER TDRR 0298	9/5/63	DH



NOTES

1. MAIL: 5052-H32 AL PER QQ-A-318 TEMP-H32
2. REMOVE SHARP EDGES
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
4. ANODIZE PER MIL-A-8625 TYPE II DYED BLACK

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	MS 21209-C0415	INSERT, SCREW THREAD, LOCKING	2
1	1004540-1	PIN, STOP	1

LIST OF MATERIALS

1003098	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 1
HEAT TREATMENT: NONE
FINAL FINISH: SEE NOTE 4

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN D. McKinney DATE 12 AUG 63
CHECKED R.T. Brown 16 Aug 63
APPROVAL L. Benson Aug 20 63
APPROVAL Peter C. Hall 5 Sept 63
NASA APPROVAL [illegible] 9/5/63
MIT APPROVAL
MIT APPROVAL A. Vogel 9/5/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PIN, STOP
RELAY MODULE ASSEMBLY

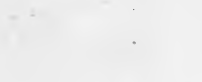
CODE IDENT NO. —
SIZE C
NASA DRAWING NO. 1004540
SCALE 10/1
WT
SHEET 1 OF 1

1004540

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

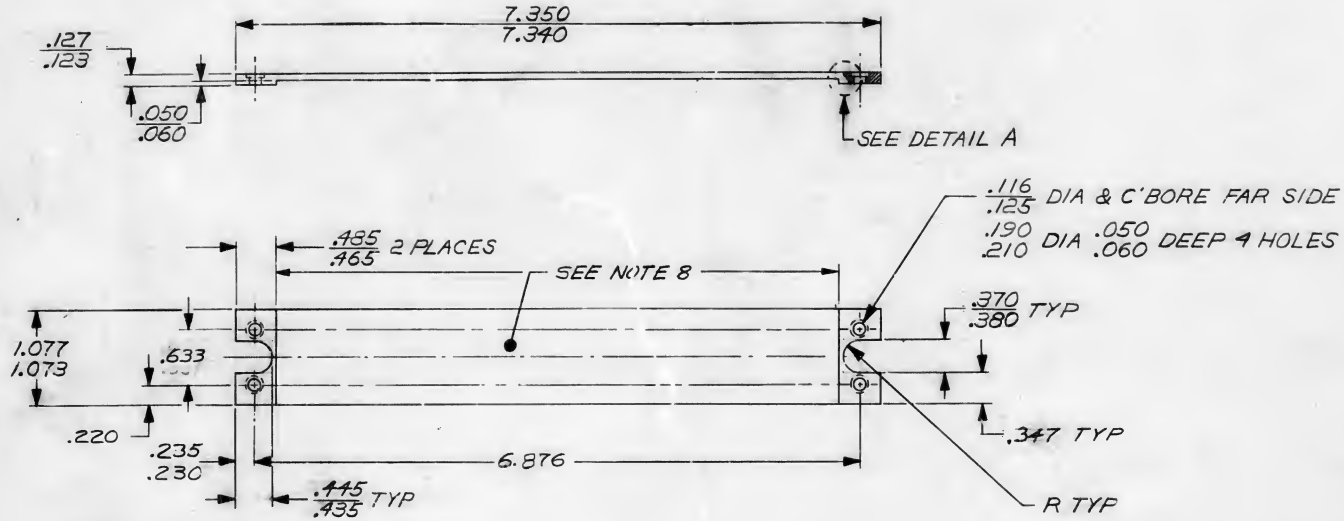
1004541 E

REVISIONS 03453			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05774	1-27-64	WK
B	REVISED PER TDRR 06432	3/16/64	
C	REVISED PER TDRR 09796 DR D.A. Chamont CHK A.R.B.	5/28/64	WK
D	REVISED PER TDRR 10383 DR P. Bradeau CHK A.R.B. RTM	6/22/64	WK
E	REVISED PER TDRR 10731 DR D.A. Wheeler CHK A.R.B. RTM	7/3/64	WK



DETAIL A
SCALE 4/1

R-10771



NOTES

1. MATERIAL: MAGNESIUM ALLOY AZ31B-H24 PER QQ-M-44
2. ALL SURFACES 125/ UNLESS OTHERWISE SPECIFIED
3. REMOVE ALL BURRS AND BREAK SHARP EDGES .005-.015
4. AR DENOTES AS REQUIRED
5. FINISH: ANODIZE PER MIL-M-3171, TYPE IV AND PROCESS ENTIRE SURFACE PER ND1002040
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
7. ~~FINISH: ANODIZE PER MIL-M-45202A, TYPE I, CLASS C, PREPICKLE PER PAR. 3.32 OF MIL M-3171A~~
8. SPRAY COAT INDICATED SURFACE WITH CLEAR EPOXY PER ND 1002035, EXCEPT TO .005-.015 DEPTH

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006843-10	INSULATION TAPE, ELEC	2
1	1004541-1	COVER	1

LIST OF MATERIALS

1003530	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT NONE
FINAL FINISH SEE NOTE 5

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN F. Mehan DATE 26 Aug 63
CHECKED A.R. Boggie 27 AUG 63
APPROVAL D. Stewart 5/31/63
APPROVAL Gilbert Hall 9 Sept 63

NASA APPROVAL [signature] 9/16/64
MIT APPROVAL
MIT APPROVAL [signature] 9/16/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

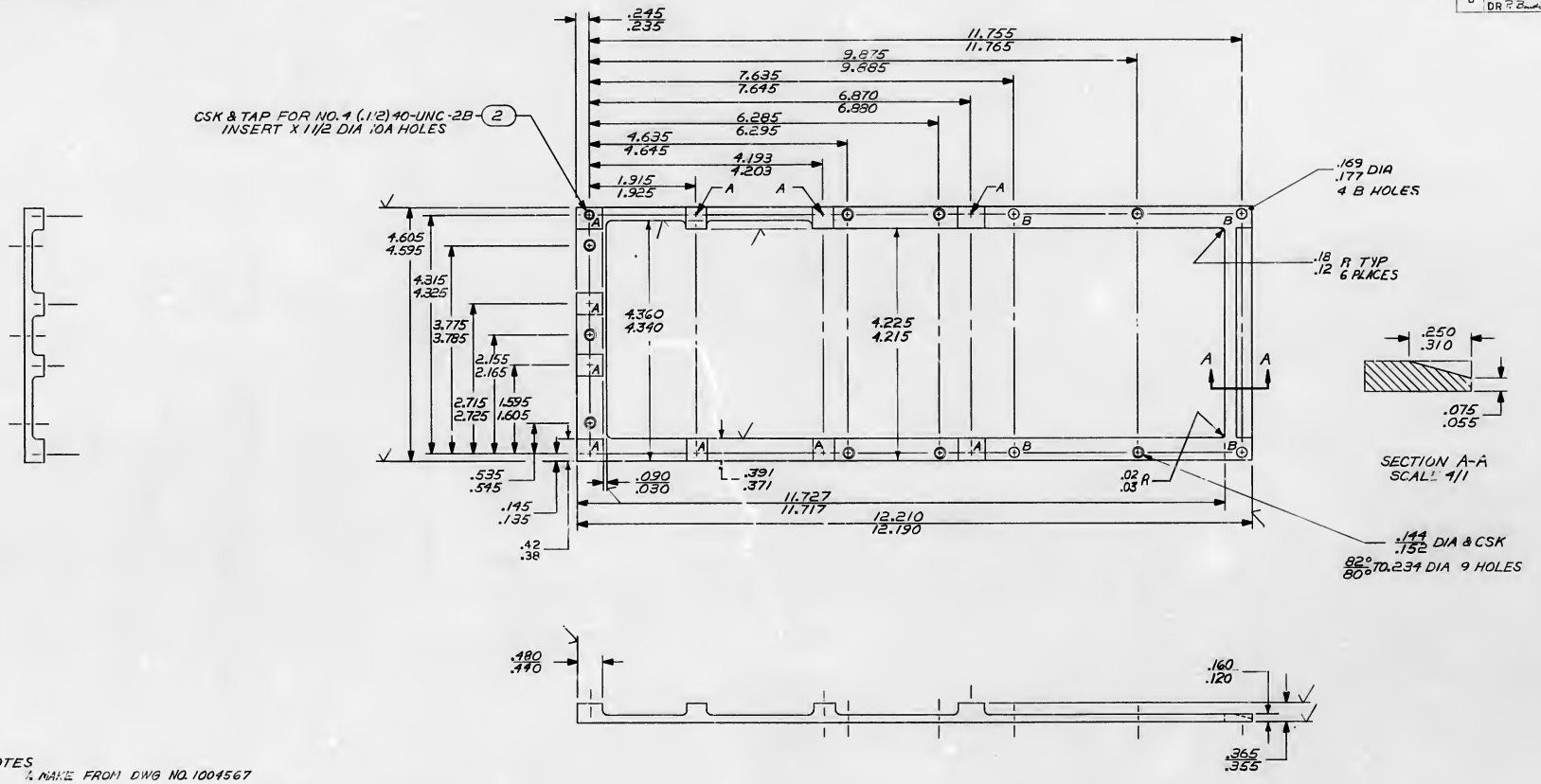
COVER
DECODING MODULE ASSEMBLY
AGC DSKY, NAV & MAIN

CODE IDENT NO.	SIZE	NASA DRAWING NO.
—	C	1004541

SCALE 1/1 | WT | SHEET 1 OF 1

1004543 B

REVISIONS 03453			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05754	11/14/67	[illegible]
B	REVISED PER TDRR 08401 DR P. Bridges CHK R.A.S.	9/1/69	[illegible]



NOTES
1. NAME FROM DWG NO. 1004567
2. MACHINED SURFACE QUALITY 125/ UNLESS OTHERWISE SPECIFIED
~~3. CAST SURFACE QUALITY 200/~~
4. MASK ALL TAPPED HOLES BEFORE ANODIZING
5. ANODIZE PER MIL-A-8625, TYPE II DYED BLACK
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
7. INSTALL FIND NO 2 PER MS33646
8. COAT THREADS AND FIND NO. 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
10	MS21209-C0415	INSERT, HELICAL	2
1	1004543-1	PLATE	1

LIST OF MATERIALS

1003458	
1003524	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT NONE
FINAL FINISH SEE NOTES 5

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DEPT. NO. CONTRACT
DRAWN R.S. Dorey DATE 2/JUN/63
CHECKED J.P. Boyle 5 SEP 63
APPROVAL N. Oleson Sept 9 63
APPROVAL [illegible] Sept 63
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

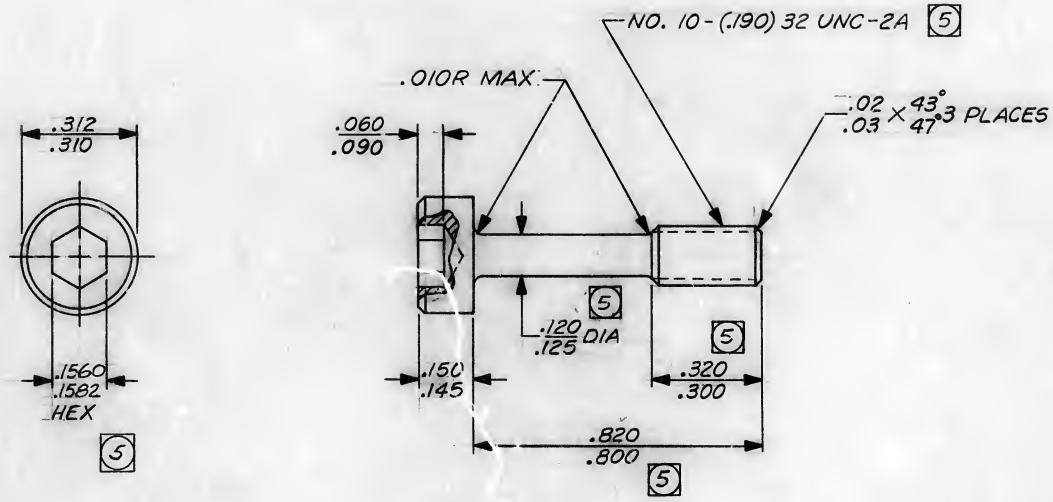
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PLATE, EL HOLD DOWN
AGC DSKY, NAV

CODE IDENT NO. —— SIZE D NASA DRAWING NO. 1004543
SCALE 1/1 WT SHEET 1 OF 1

1004545

REVISIONS 03453			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES

1. MATL: 303 CRES PER QQ-S-763 CLASS 303 COND A
2. REMOVE ALL BURRS & SHARP EDGES
3. PASSIVATE PER MIL-F-14072, TYPE I, FIN. E-300
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

(5) DIMENSIONS ARE CONTROLLED BY ICD MH01-01004-116

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1003524	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TPEATMENT NONE
FINAL FINISH SEE NOTE 3

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN H. Caglayan DATE 6SEPT63
CHECKED A.T. Burke 6 Sept 63
APPROVAL V. Jamsen Sept 19 63
APPROVAL Edna C. Hall 20 Sept 63
NASA APPROVAL E. Whitehead 9/24/63
MIT APPROVAL
MIT APPROVAL O. Nagel 9/26/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

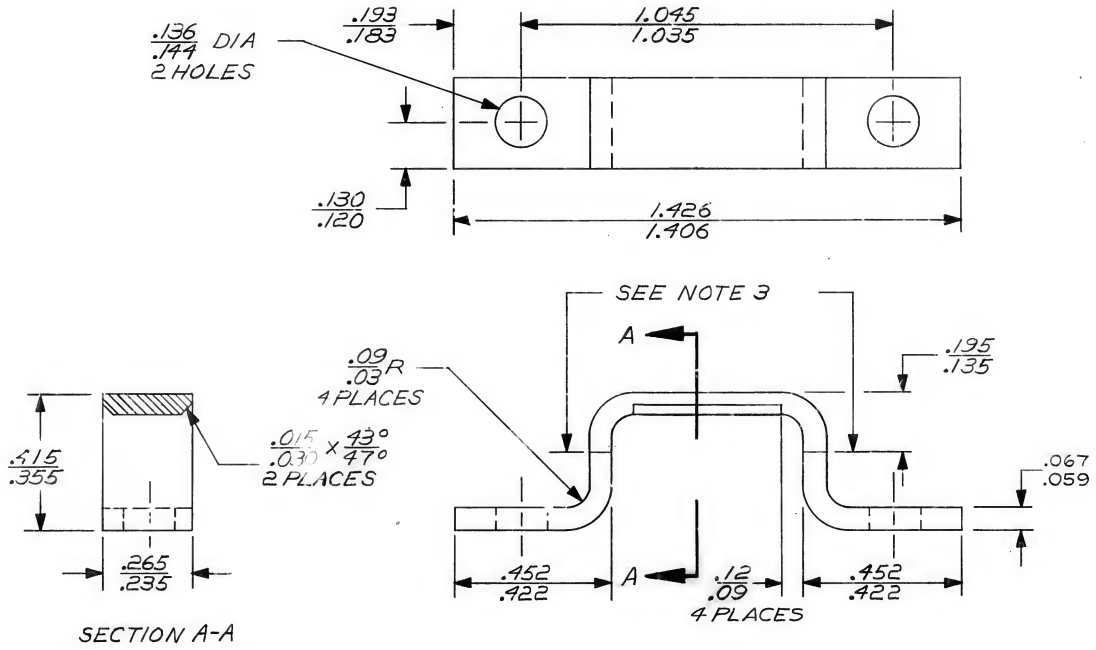
SCREW, CAPTIVE
AGC DISPLAY AND KEYBOARD

CODE IDENT NO.	SIZE	NASA DRAWING NO.
———	C	1004545
SCALE 4/1	WT	SHEET 1 OF 1

MASTER

A 1004547

REVISIONS 03453			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 06016	29 Jan 65	[illegible]



NOTES

1. MATL: 5052-H32 ALUMINUM PER QQ-A-318 TEMP H32
2. ANODIZE PER MIL-A-8625 TYPE II DYED BLACK
3. EPOXY COAT ALL FOUR SIDES OF INDICATED AREA PER ND 1002035
4. REMOVE BURRS AND SHARP EDGES
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1003524	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 1
HEAT TREATMENT: NONE
FINAL FINISH: SEE NOTE 2

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN P.S. Tracy DATE 10 Sept 63
CHECKED R.R. Thurber 12 Sept 63
APPROVAL Thomson 19 Sept 63.
APPROVAL [illegible]
NASA APPROVAL [illegible] 9/24/63
MIT APPROVAL
MIT APPROVAL [illegible] 9/26/63

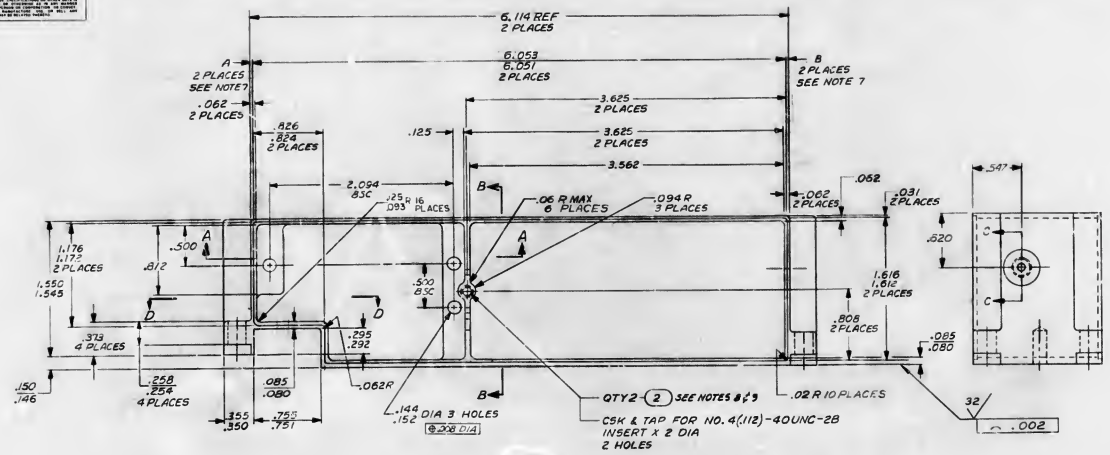
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

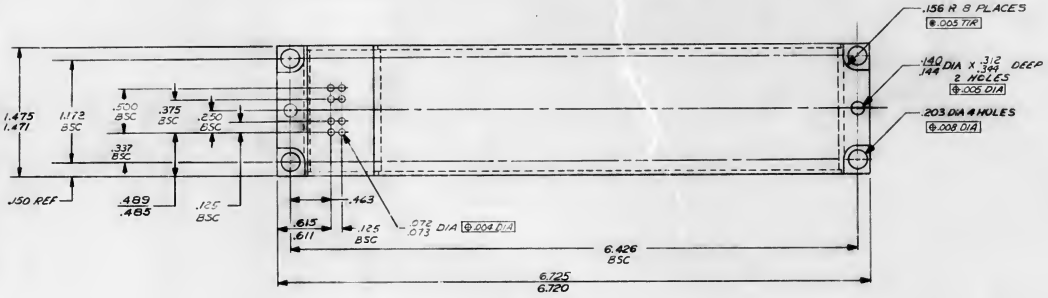
BRACKET, CABLE SUPPORT
AGC DISPLAY AND KEYBOARD

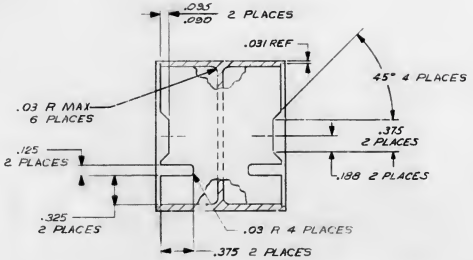
CODE IDENT NO. —— | SIZE C | NASA DRAWING NO. 1004547
SCALE 4/1 | WT | SHEET 1 OF 1

1004548

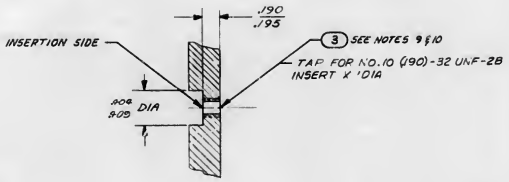
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRA [illegible]	[illegible]	[illegible]
B	REVISED PER TDR [illegible]	[illegible]	[illegible]
C	REVISED PER TDR 08411 DR B CHK [illegible]	[illegible]	[illegible]



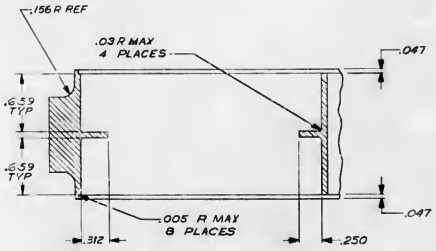




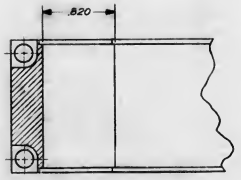
SECTION B-B



SECTION C-C



SECTION A-A



SECTION D-D

NOTES:
1. MATL: 2024-T4 AL PER QQ-A-268 TEMP T4
2. REMOVE ALL BURRS AND SHARP EDGES
3. ANODIZE / MIL-A-8625 TYPE I DYED BLACK
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
5. 63 UNLESS OTHERWISE SPECIFIED
6. UNLESS OTHERWISE SPECIFIED ALL FILLETS & RADII TO BE .010 MAX
7. A & B DIMENSIONS TO BE EQUAL WITHIN .005
8. INSTALL FIND NO. 2 PER MS33646
9. COAT THREADS & FIND NUMBERS 2 & 3 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER
10. INSTALL FIND NO. 3 PER MS33646 BREAK OFF DRIVING TANG

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
1	MS21208-F1-10	INSERT, HELICAL COIL	3
2	MS21209-C0420	INSERT, HELICAL COIL	2
1	1003395-1	HEADER HOUSING	1

LIST OF MATERIALS

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS .XX ± .01 .XXX ± .005 ANGLES ± 1° DO NOT SCALE THIS DRAWING	MATERIAL SEE NOTE 1
1003537			HEAT TREATMENT NONE
NEXT ASSY	USED ON	APPLICATION	FINISH SEE NOTE 3

MIT INSTRUMENTATION LAB Cambridge, Mass.

DRAWN J. Sousa DATE 5-1-68
CHECKED [illegible] DATE 5-1-68
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible] 5/7/68
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

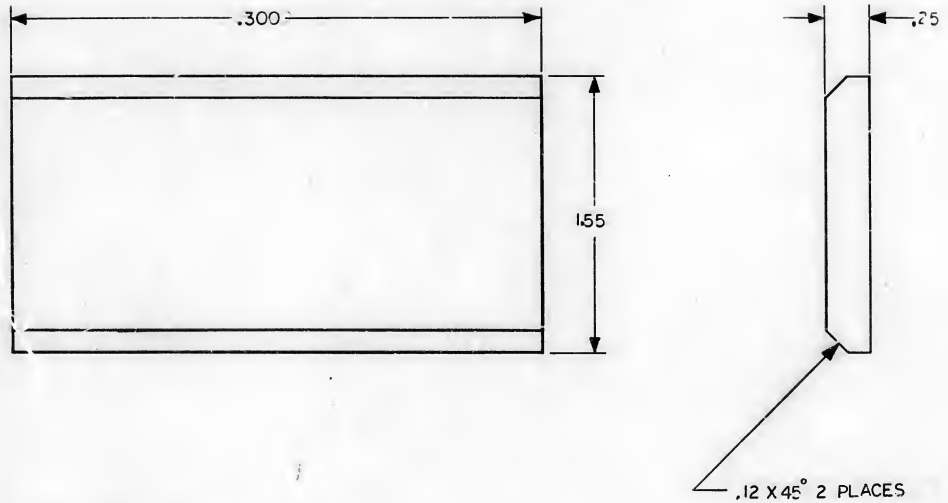
MANNED SPACECRAFT CENTER HOUSTON, TEXAS

HEADER HOUSING
AGC CLOCK OSCILLATOR

CODE IDENT NO —— SIZE E NASA DRAWING NO. 1004548
SCALE 2/1 WT SHEET 1 OF 1

1004553

REVISIONS 03453			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES:-
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. MAT'L MAKE FROM DRAWING NO 1006729

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1003527	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± .02 ANGLES ± 5°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT —
FINAL FINISH —

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN D.D. Cameron DATE Sept 63
CHECKED R. Edwards 5 Sept 63
APPROVAL WB Tyler 25 Sept 63
APPROVAL D.J. Hoffman 9/26/63
NASA APPROVAL [illegible] 9/26/63
MIT APPROVAL —
MIT APPROVAL D. Wahl 9/26/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

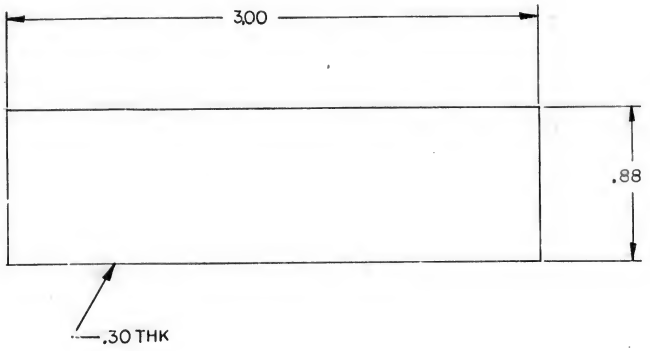
INSULATOR, SIDE
AGC OSCILLATOR

CODE IDENT NO. —
SIZE C
NASA DRAWING NO. 1004553
SCALE 2/1 WT
SHEET 1 OF 1

MASTER

A 1004554

REVISIONS 03453			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05779	1-21-64	K.T.B. WK



NOTES:-
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAT L.: MAKE FROM DRAWING NO. 1006729

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1003527	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT —
FINAL FINISH —

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN B. Barnett DATE 18 SEP 63
CHECKED R. Edward 9 Sept 63
APPROVAL W.D. Typaas 25 SEP 63
APPROVAL C.J. Duggan 9/26/63
NASA APPROVAL W. Michael 9/24/63
MIT APPROVAL
MIT APPROVAL J. Hafel 9/26/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR
AGC OSCILLATOR

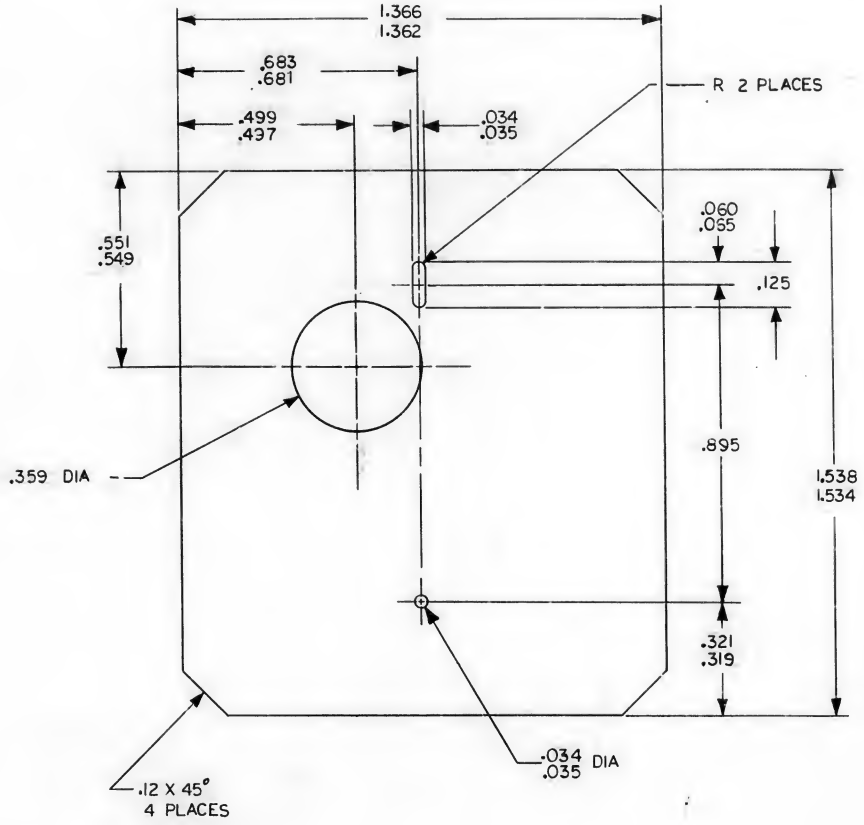
CODE IDENT NO.	SIZE	NASA DRAWING NO.
—	C	1004554

SCALE 2/1 WT SHEET 1 OF 1

MASTER

1004555

REVISIONS 03453			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES:—
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAT'L .031 THK G10 PLASTIC PER MIL-P-18177, TYPE GEE
3. REMOVE BURRS AND SHARP EDGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1003527	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±.005
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT —
FINAL FINISH —

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN S.C. Degenaro DATE 5 Sept 63
CHECKED G. A. Minner 25 SEPT. 63
APPROVAL W.S. Turner 25 Sep 63
APPROVAL E. J. Duggan 9/26/63
NASA APPROVAL W. Widnall 9/14/63
MIT APPROVAL —
MIT APPROVAL E. Wolf 9/26/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

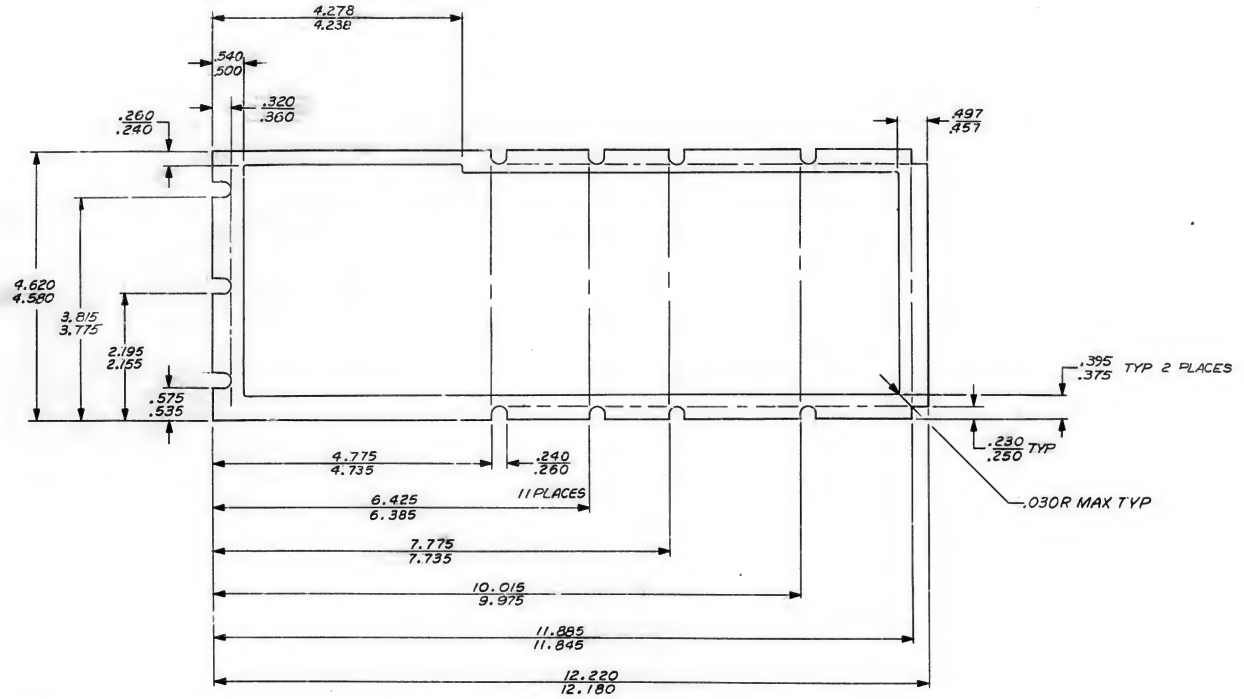
END PLATE, RIGHT
AGC OSCILLATOR

CODE IDENT NO. —
SIZE C
NASA DRAWING NO. 1004555
SCALE 4/1 WT SHEET 1 OF 1

MASTER

1004555

REVISIONS 03453			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TWR 04470	11-6-67	BPE WC



NOTES
1. MATL: .060/.090 THICK NEOPRENE RUBBER PER MIL-R-6855 CLASS II, HARDNESS 40 DUROMETER
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS. DWG NO CONTRACT
		MATERIAL SEE NOTE 1	DRAWN H. Carlson DATE 8SEP65
		HEAT TREATMENT NONE	CHECKED Q.P. Bogni 9SEP65
1003534		FINAL FINISH NONE	APPROVAL [illegible]
NEXT ASSY	USED ON		APPROVAL [illegible]
APPLICATION			NASA APPROVAL [illegible]
			MIT APPROVAL [illegible]
			MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

GASKET
AGC DSKY & NAV

CODE IDENT NO.	SIZE	NASA DRAWING NO.
—	D	1004559
SCALE 1/1	WT	SHEET 1 OF 1

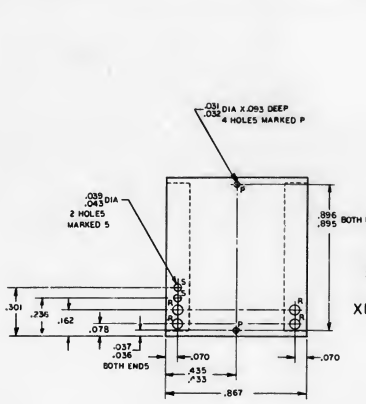
1004559 A

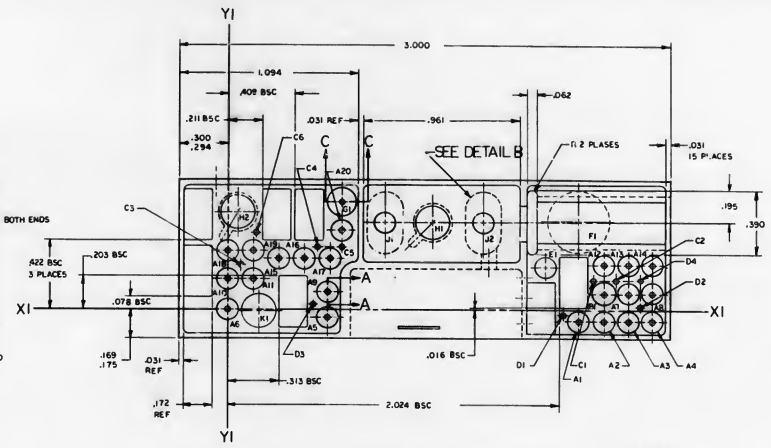
1004560 C

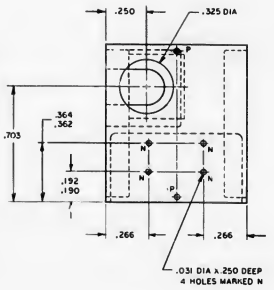
REVISIONS			
QTY	DESCRIPTION	DATE	APPROVED
A	REVISED PER TORR 06018		
B	REVISED PER TORR 07261 DR/Gallagher CHK OLH	3/14/68	TRK
C	INACTIVATED - DESGN CHANGE PER TORR 12600 DR Gallagher CHK OLH	11-7-68	TRK

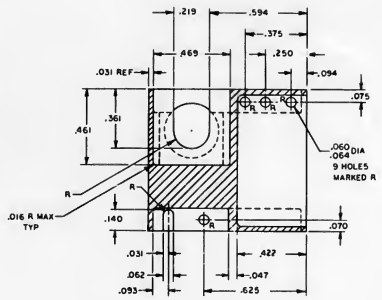
HOLE IDENT	X1 BASIC DIM.	Y1 BASIC DIM.	⊕ DIA	HOLE DIA
A1	2.143	-0.067	.002	
A2	2.301	-0.067		
A3	2.449	-0.067		
A4	2.593	-0.067		
A5	0.610	-0.047		
A6	0.000	0.000		
A7	2.449	0.105		
A8	2.593	0.105		
A9	0.610	0.109		
A10	0.000	0.188		
A11	0.156	0.188		
A12	2.301	0.277		
A13	2.449	0.277		
A14	2.593	0.277		
A15	0.313	0.312		
A16	0.469	0.312		
A17	0.625	0.312		
A18	0.000	0.359		
A19	0.156	0.359		
A20	0.695	0.484	.002	SEE SECTION A-A
B1	2.301	0.105	.002	SEE SECTION B-B
C1	2.235	0.191	.002	
C2	2.375	0.191		
C3	0.078	0.273		.021 .024 DEEP
C4	0.547	0.382		
C5	0.695	0.382		
C6	0.172	0.468	.002	
D1	2.047	-0.031	.002	
D2	2.520	0.019		.021 .024 X.203 DEEP NEARSIDE
D3	0.520	0.031		
D4	2.520	0.191		
D5	2.047	-0.031		.021 .024 X.203 DEEP FARSIDE
D6	2.520	0.019		
D7	0.520	0.031		
D8	2.520	0.191	.002	
E1	1.943	0.261	.002	.123/.129
F1	2.141	0.540	.002	.375 X.281 DEEP FARSIDE
G1	0.695	0.660	.002	SEE SECTION C-C
H1	1.250	0.531	.002	SEE DETAIL A
H2	0.062	0.594	.002	
J1	0.959	0.531	.002	SEE DETAIL B
J2	1.559	0.531	.002	
K1	0.189	-0.007	.002	.204/.210

NOTES
1. MATL: G10 PLASTIC SHEET PER MIL-P-18177, TYPE GEE
2. REMOVE BURRS AND BREAK SHARP EDGES
3. ALL BASIC DIMENSIONS TO BE ⊕ .002

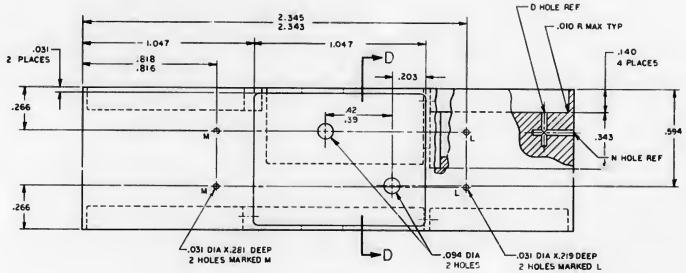


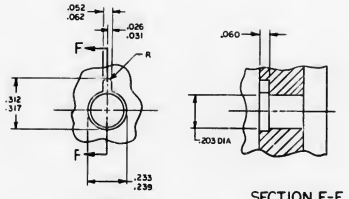






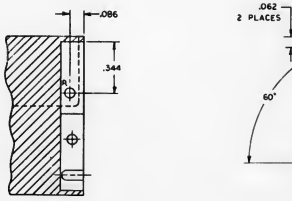
SECTION D-D



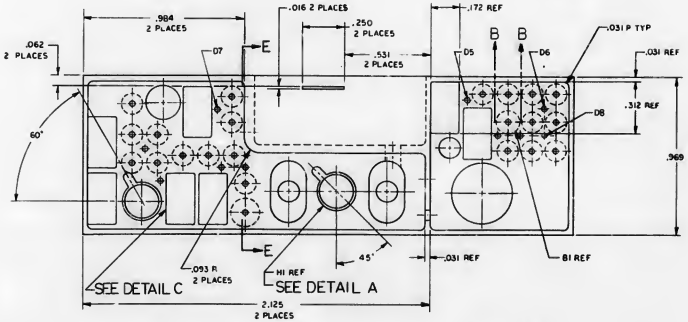


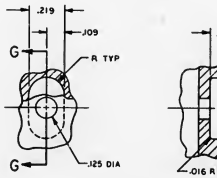
DETAIL A
2 PLACES

SECTION F-F

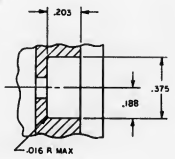


SECTION E-E

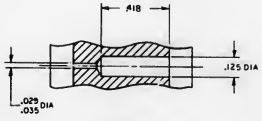




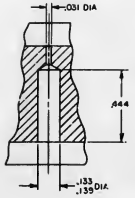
DETAIL B
2 PLACES



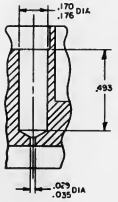
SECTION G-G



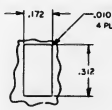
SECTION A-A
20 PLACES



SECTION B-B



SECTION C-C



DETAIL C
7 PLACES

INACTIVE
FOR NEW PROCUREMENT USE 1004659

QTY PROD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± DECIMALS ± .005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT NONE
FINISH NONE

1003526
NEXT ASSY | USED ON
APPLICATION

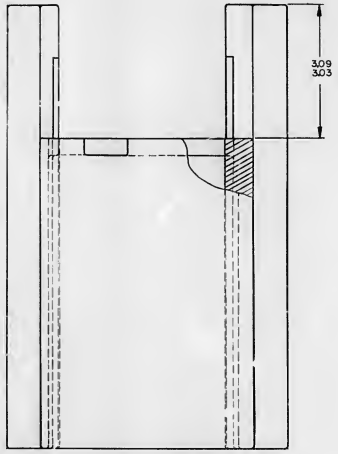
MIT INSTRUMENTATION LAB
Cambridge Mass.
DRAWN BAR DATE 2 Sept 63
CHECKED [signature] 9/Nov/63
APPROVAL [signature] 11 Nov 63
APPROVAL [signature]
NASA APPROVAL [signature]
MIT APPROVAL [signature]
MIT APPROVAL [signature] 11/20/63

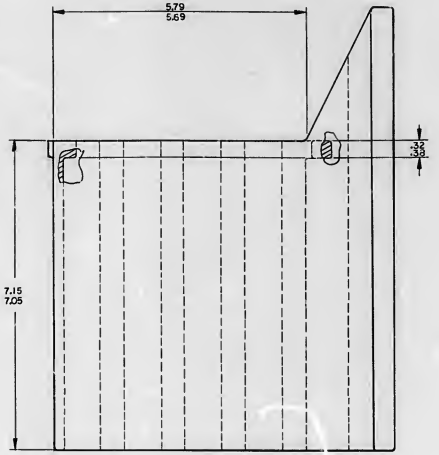
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

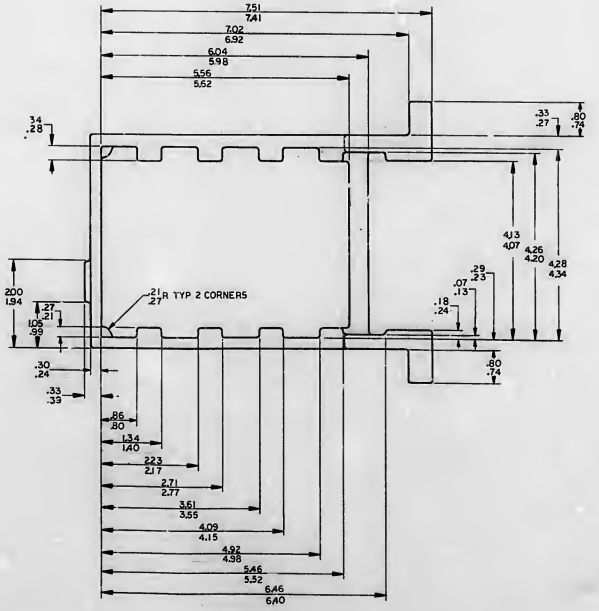
HOLDER, COMPONENT
OSCILLATOR STAGE
AGC OSCILLATOR

CODE IDENT NO. | SIZE J | NASA DRAWING NO. 1004560
SCALE 4/1 | WT | SHEET 1 OF 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL







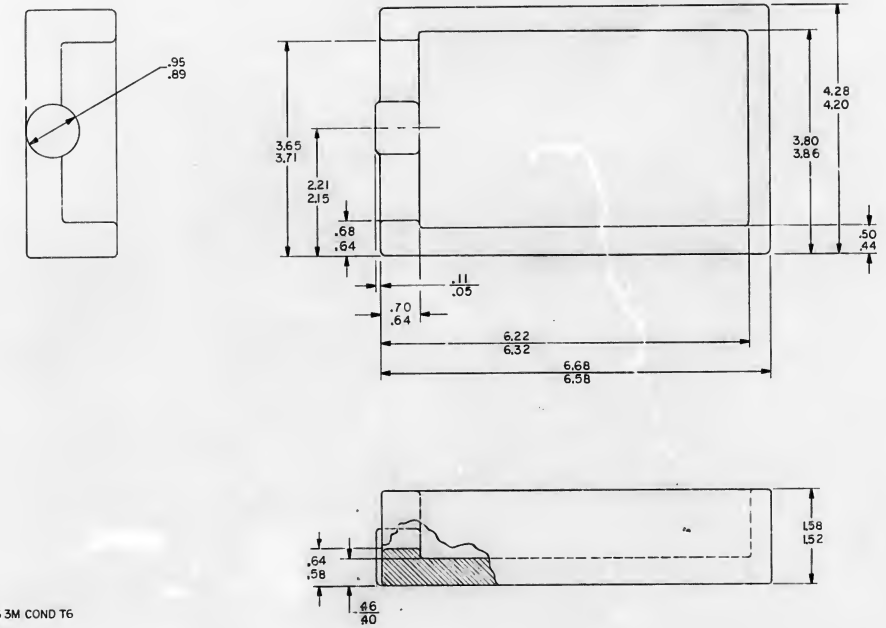
NOTES:

1. MATL: CAST 356-T6 ALUMINUM, TEMP T6, CLASS 3M, CONDITION T6, PER QQ-A-501
2. CLASSIFICATION OF CASTING PER MIL-C-6021, CLASS 121A
3. SURFACE QUALITY 250
4. FILLETS AND ROUNDS TO BE .06 R
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB Cambridge, Mass. DRN. BY ... DATE 12-16-63 CHECKED ... APPROVAL ... APPROVAL ...	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
		MATERIAL SEE NOTE 1	NASA APPROVAL	CASTING RELAY HOUSING AGC DSKY, NAV & MAIN	
1004569		HEAT TREATMENT NONE	MIT APPROVAL	CODE IDENT NO.	SIZE E
1004539		FINAL FINISH NONE	MIT APPROVAL 12/16/63	NASA DRAWING NO. 1004561	
NEXT ASSY	USED ON			SCALE 1/1	WT
APPLICATION				SHEET 1 OF 1	

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES
1. MATL CAST 356-T6 ALUMINUM TEMP T6 CLASS 3M COND T6 PER QQ-A-601.
2. CLASSIFICATION OF CASTING PER MIL-C-6021 CLASS 2A.
3. SURFACE QUALITY 250
4. FILLETS AND ROUNDS TO BE .12R.
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING	MATERIAL: SEE NOTE 1
1004113			HEAT TREATMENT: NONE
NEXT ASSY	USED ON		FINAL FINISH: NONE
APPLICATION			

MIT INSTRUMENTATION LAB (CAMBRIDGE, MASS.) DWG. NO. CONTRACT:

DRAWN R Bergeron DATE 9-19-63
CHECKED [illegible] 20576-3
APPROVAL [illegible] OCT 31 '63
APPROVAL [illegible] 17 DEC 63
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

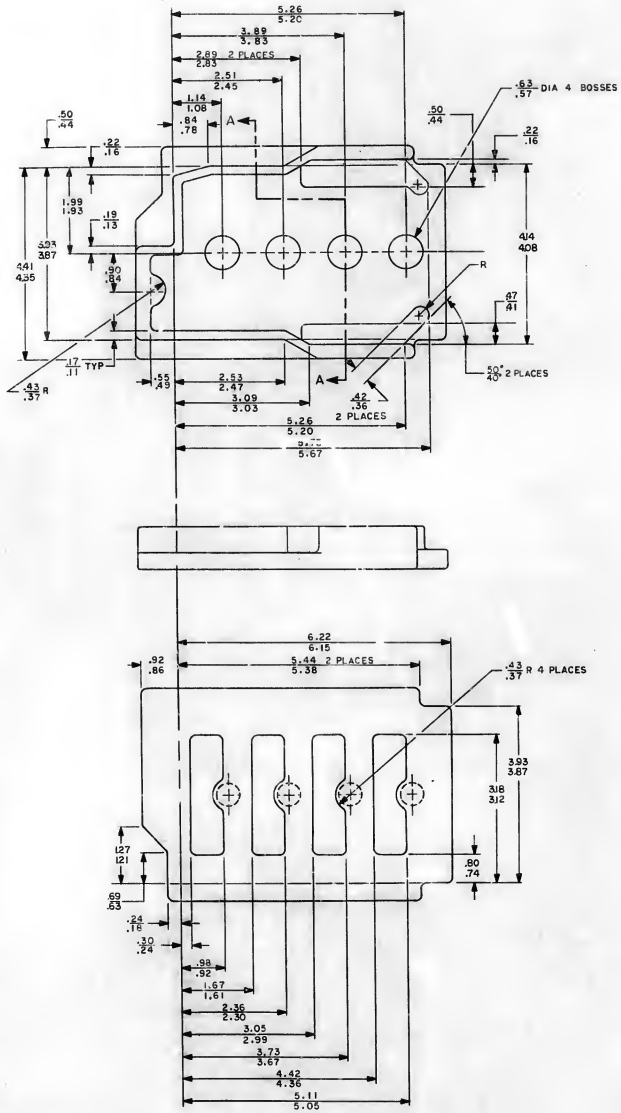
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

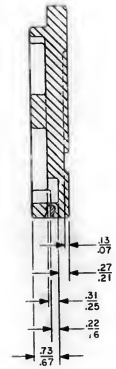
CASTING
HEADER ASSY RELAY MODULE AGC DSKY, NAV & MAIN

CODE IDENT NO.	SIZE	NASA DRAWING NO.
———	D	1004562
SCALE 1/1	WT	SHEET 1 OF 1

1004562

REVISIONS			
DIT	DESCRIPTION	DATE	APPROVAL





SECTION AA

NOTES
1. MATL: CAST 356-T6 ALUMINUM TEMP T6, CLASS 3M, CONDITION T6, PER QQ-A-601
2. CLASSIFICATION OF CASTING PER MIL-C-6021 CLASS IIA
3. SURFACE QUALITY 250
4. FILLETS AND ROUNDS TO BE .06 R
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.
	TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	DRAWN [illegible] DATE 2/14/63
	DO NOT SCALE THIS DRAWING	CHECKED [illegible] DATE 2/15/63
	MATERIAL SEE NOTE 1	APPROVAL [illegible]
1004584		APPROVAL [illegible]
1004152	HEAT TREATMENT NONE	NASA APPROVAL
NEXT ASSY / USED ON	FINAL FINISH NONE	MIT APPROVAL
APPLICATION		MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CASTING
CONNECTOR PLATE
AGC, DSKY, NAV & MAIN

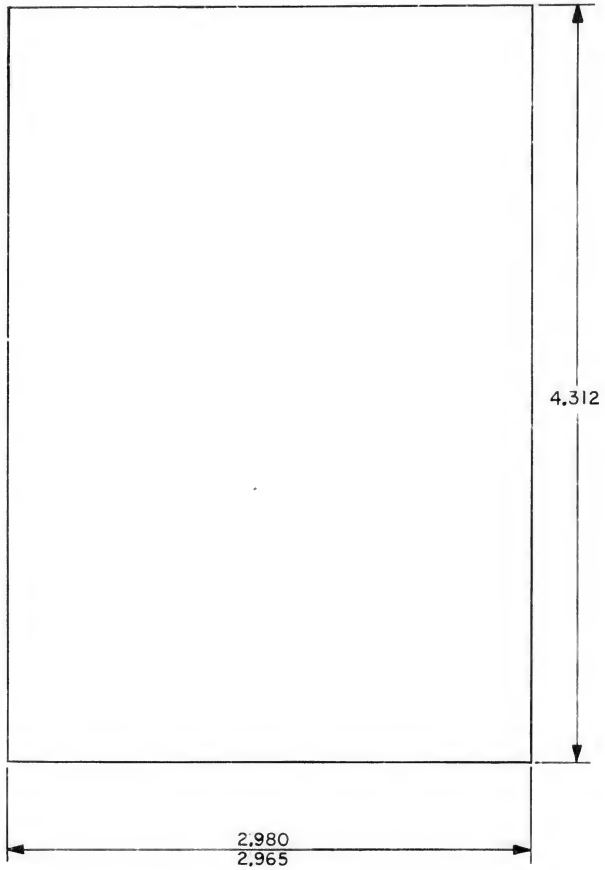
CODE IDENT NO.	SIZE	FASA DRAWING NO.
	E	1004563

SCALE 1/1 WT SHEET 1 OF 1

1004563

A | 1004564

REVISIONS 0363			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 07261 DR H. Carlson CHK Cuer	3/23/64	HEK



NOTES
1. MATL: 004 THK SHEET, COPPER SOFT ANNEALED, COLD ROLLED PER QQ-C-576
2. SILVER PLATE PER QQ-S-365, TYPE III GRADE A
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1003526	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.016 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 1
HEAT TREATMENT: NONE
FINAL FINISH: SEE NOTE 2

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS
DWG. NO. | CONTRACT

DRAWN R Bowers DATE 25 Sep 63
CHECKED R. Edwards 24 Sep 63
APPROVAL W B Tyson 20 OCT 63
APPROVAL E J Duggan 10/26/63
NASA APPROVAL W J Rhine 10-29-63
MIT APPROVAL
MIT APPROVAL W Cuffe 30 Oct 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SHIELD
AGC OSCILLATOR

CODE IDENT NO.	SIZE	NASA DRAWING NO.
———	C	1004564
SCALE 2/1	WT	SHEET 1 OF 1

1004564 A1

1004566

REVISIONS 8363

SYM	DESCRIPTION	DATE	APPROVAL
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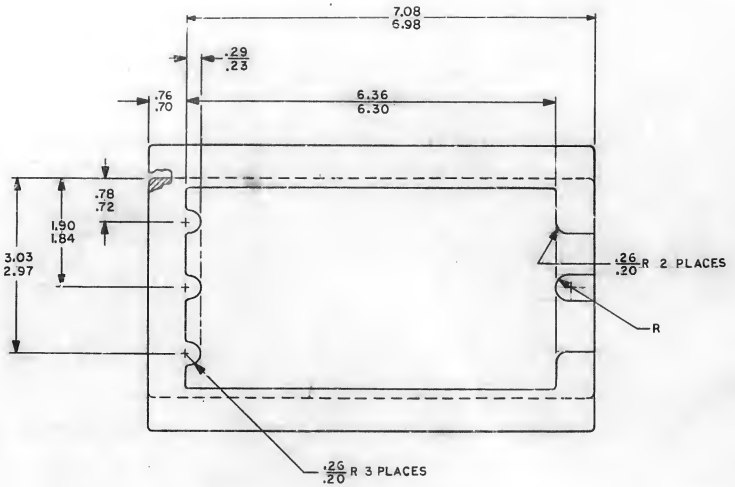
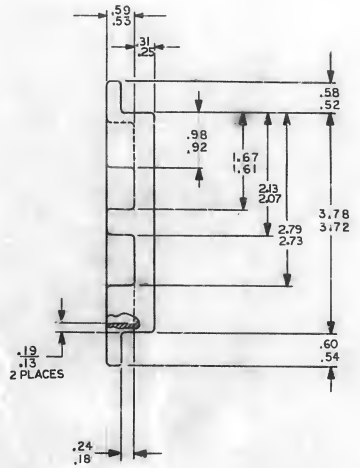
B	REVISED PER TDRR 04740	11-26-63	





NOTES

1. MATL: CAST 356-T6 ALUMINUM ALLOY TEMP T6, CLASS 3M, CONDITION T6, PER QQ-A-601
2. CLASSIFICATION OF CASTING PER MIL-C-6021 CLASS IIA
3. SURFACE QUALITY 250
4. FILLETS AND ROUNDS TO BE .06/.12 R
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1004154	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT NONE
FINAL FINISH NONE

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DEPT. NO. CONTRACT
DRAWN H. Osborn DATE 2/20/63
CHECKED R. Rogers 2-25-63
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

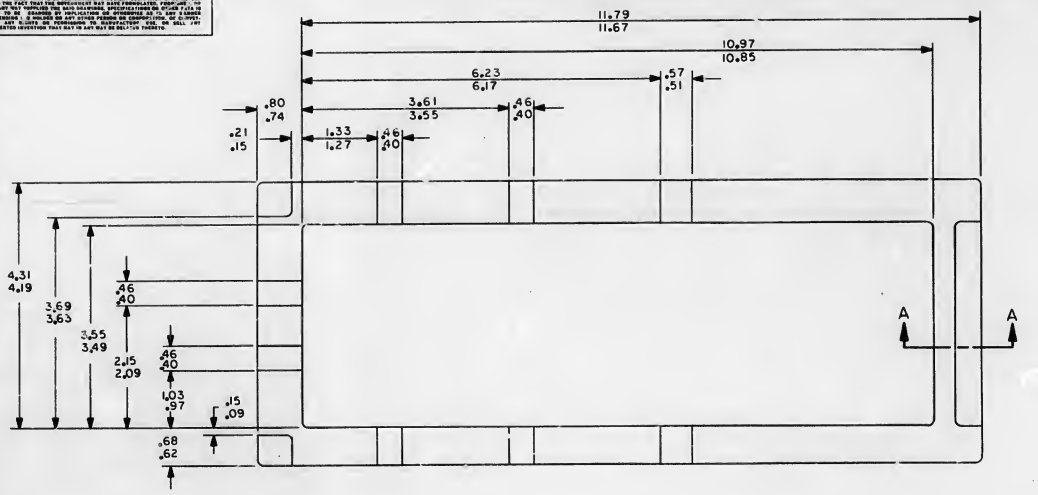
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

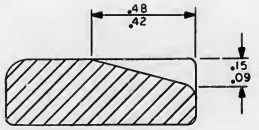
CASTING CONNECTOR PLATE DECODING MODULE AGC DSKY NAV E MAIN

CODE IDENT NO. —— SIZE D NASA DRAWING NO. 1004566
SCALE 1/1 WT SHEET 1 OF 1

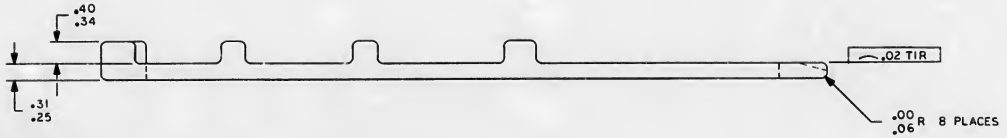
REVISIONS 69735			
SYM	DESCRIPTION	DATE	APPROVAL

1004567





SECTION A-A
SCALE 4/1



NOTES

1. MATL: CAST 356-T6 ALUMINUM TEMP T6, CLASS 3M, CONDITION T6, PER QQ-A-601
2. CLASSIFICATION OF CASTING PER MIL-C-6021 CLASS 1A
3. SURFACE QUALITY 250/
4. FILLETS AND ROUNDS TO BE .06/.12 R UNLESS OTHERWISE SPECIFIED
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1004543	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT NONE
FINAL FINISH NONE

M I T INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG NO. CONTRACT

DRAWN [illegible] DATE 1/14/63
CHECKED [illegible] DATE 1/22/63
APPROVAL [illegible] DATE 1/14/63
APPROVAL [illegible] DATE 1/15/63
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible] DATE 2/6/63

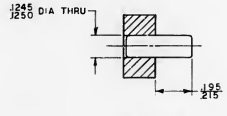
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

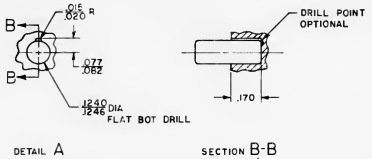
CASTING PLATE ELECTRO LUMINESCENT A G C KEYBOARD

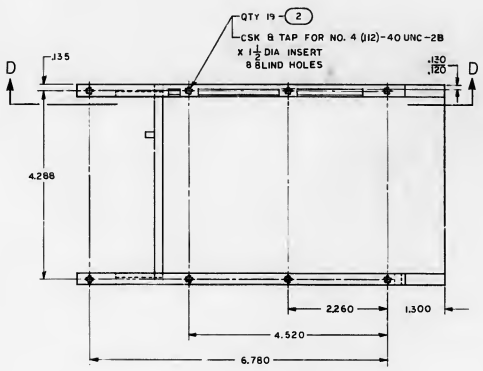
CODE IDENT NO.	SIZE	NASA DRAWING NO.
—	D	1004567
SCALE 1/1	WT	SHEET 1 OF 1

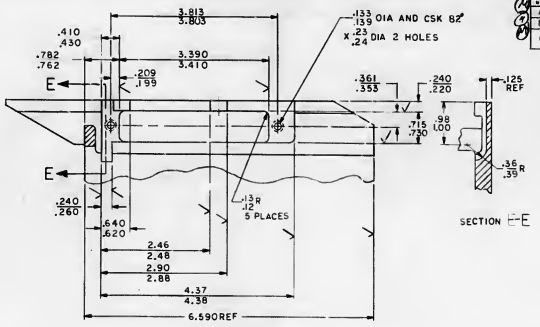
1004569C

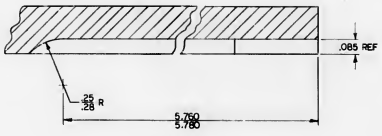
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TORR 05113		
B	REVISED PER TORR 05778	11/24	
C	REVISED PER TORR 07644 DR CHK	11/21/67	

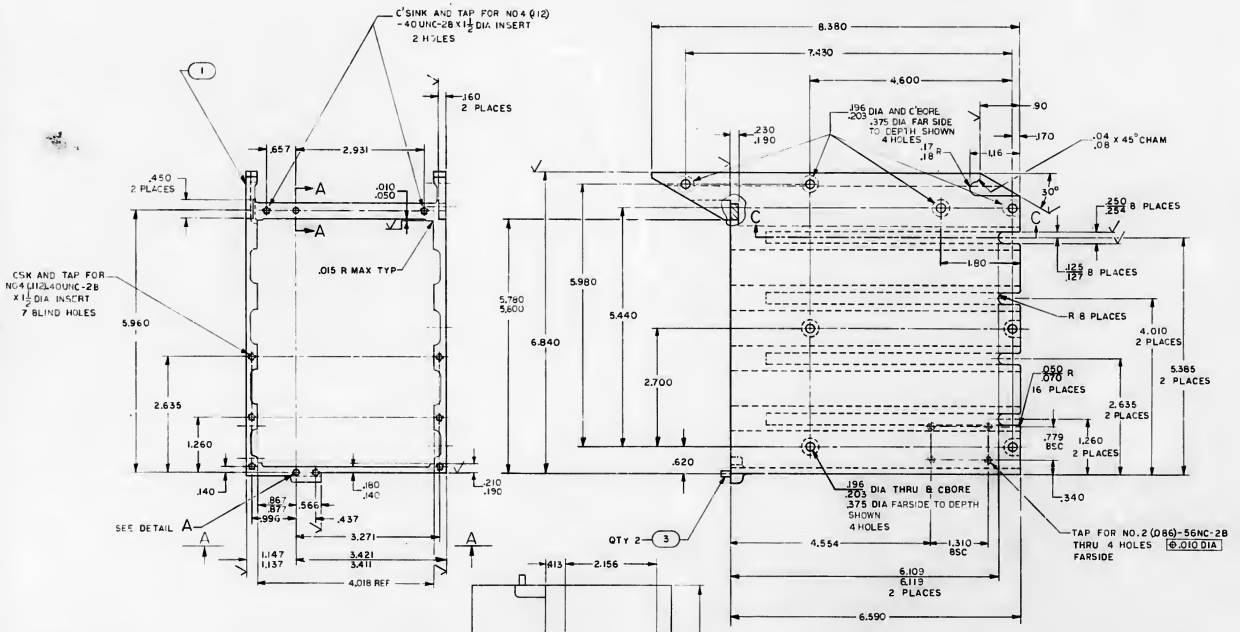


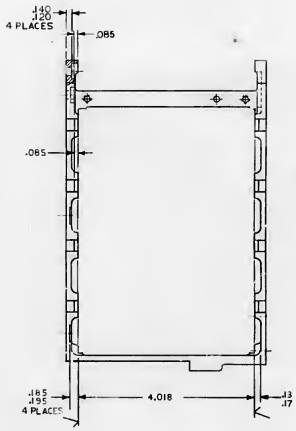


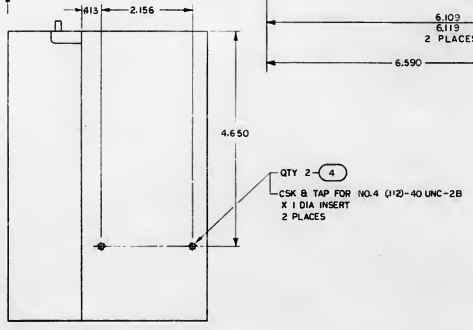












NOTES
1. MAKE FROM 1004561
2. SURFACES MARKED √ TO BE 125√
3. ANODIZE PER MIL-A-8625, TYPE I, DYE BLACK
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

SEE NOTE 1

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS21208-C0410	INSERT HELICAL	4
2	AN122652	PIN, DOWEL	3
17	MS21209-C0415	INSERT HELICAL	2
1	1004569-1	HOUSING, RELAY TRAY	1

LIST OF MATERIALS

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES .XX ±.005 ±.030 .XXX ±.002 DO NOT SCALE THIS DRAWING	MATERIAL: SEE NOTE 1
1003540	1003400	HEAT TREATMENT: NONE	
NEXT ASSY	USED ON	FINISH: SEE NOTE 3	
APPLICATION			

INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DRAWN [illegible] DATE OCT 67
CHECKED G.R. Rogers 11/20/67
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

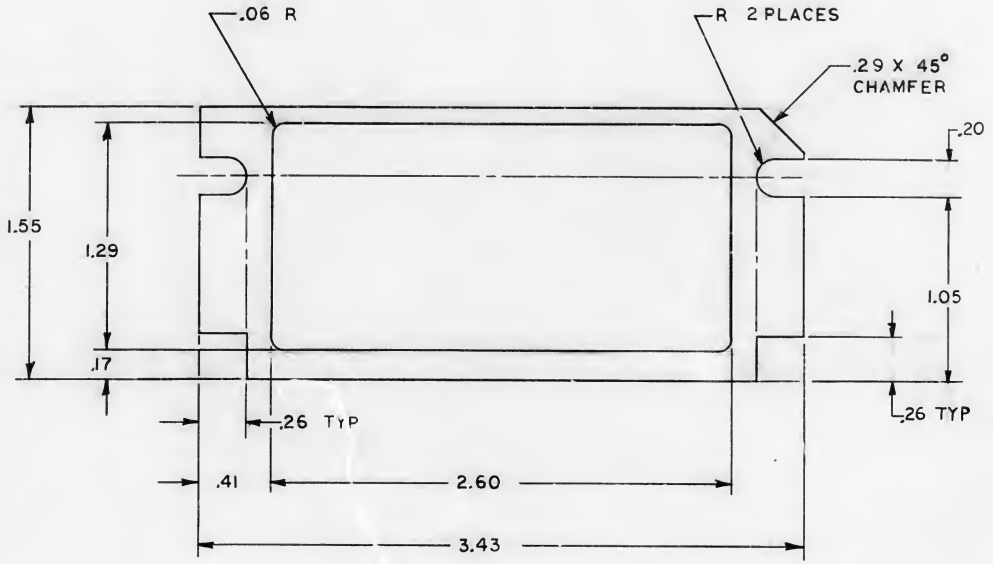
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

HOUSING, RELAY TRAY
AGC DSKY, MAIN

CODE IDENT NO. E | SIZE | NASA DRAWING NO 1004569
SCALE 1/1 | WT | SHEET 1 OF 1

1004581

REVISIONS 04486			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES

1. MATL: .06 /.09 THK NEOPRENE RUBBER PER MIL-R-6855, CLASS II, HARDNESS 40 DUROMETER
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1003543	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 1
HEAT TREATMENT
NONE
FINAL FINISH
NONE

INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO CONTRACT

DRAWN N.G. Clement DATE 30 OCT '63
CHECKED R.R. Bogni 29 OCT 63
APPROVAL [illegible] OCT. 30 63.
APPROVAL [illegible] Nov 6 3
NASA APPROVAL [illegible]
MIT APPROVAL
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

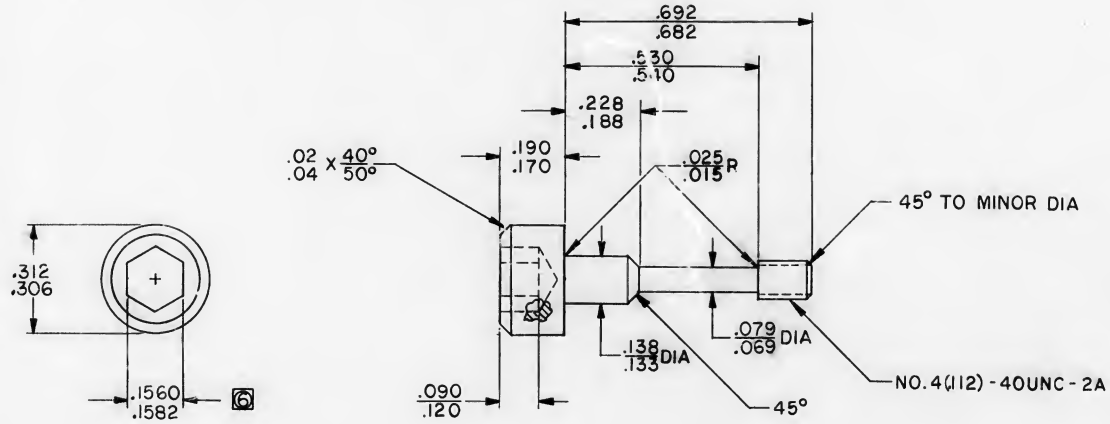
GASKET
INDICATOR DISPLAY
AGC DSKY MAIN

CODE IDENT NO.	SIZE	NASA DRAWING NO
	C	1004581
SCALE 2/1	WT	SHEET 1 OF 1

1004581

1004583

REVISIONS 05/18			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES

1. MATERIAL: 416 CRES, CLASS 416, COND H, PER QQ-S-763
2. FINISH: PASSIVATE PER MIL-F-14072
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
4. REMOVE ALL BURRS AND SHARP EDGES
5. REMOVE BURRS FROM BOTTOM OF BROACHED HOLE
6. (6) DIMENSION CONTROLLED BY ICDMH01-01005-116

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1003532	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 1
HEAT TREATMENT: NONE
FINAL FINISH: SEE NOTE 2

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG. NO. / CONTRACT

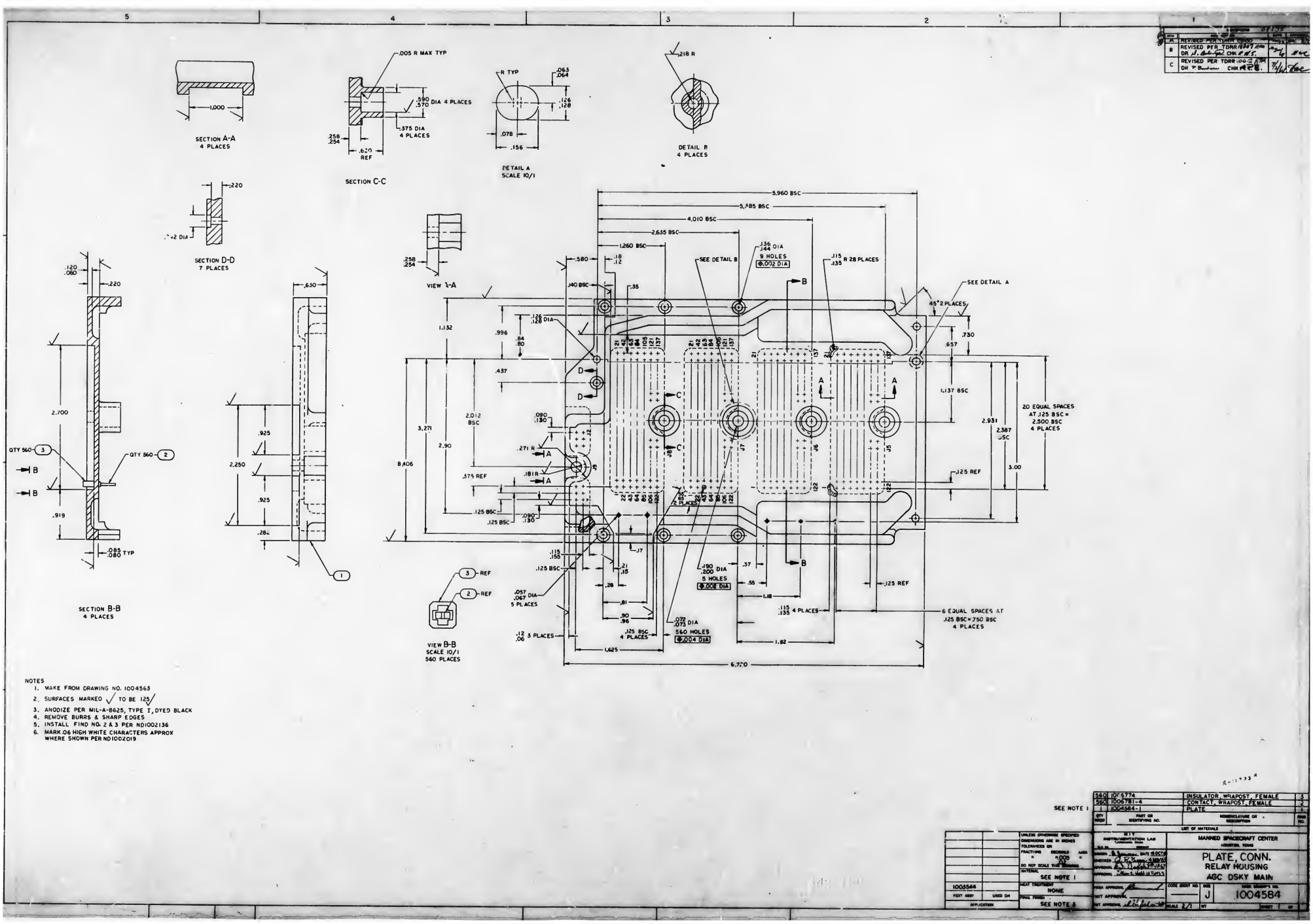
DRAWN [signature] DATE 19 NOV 63
CHECKED G.R. Bogni 25NOV63
APPROVAL [signature]
APPROVAL [signature] 12-16-63
NASA APPROVAL [signature] 12/11/63
MIT APPROVAL ———
MIT APPROVAL [signature] 12/17/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCREW, CAPTIVE-POWER SUPPLY AGC DSKY NAV & MAIN

CODE IDENT NO.	SIZE	NASA DRAWING NO.
———	C	1004583
SCALE 4/1	WT	SHEET 1 OF 1

1004583



NOTES

1. MAKE FROM DRAWING NO. 1004563
2. SURFACES MARKED √ TO BE 125√
3. ANODIZE PER MIL-A-8625, TYPE I, DYED BLACK
4. REMOVE BURRS & SHARP EDGES
5. INSTALL FIND NO. 2 & 3 PER ND1002136
6. MARK .06 HIGH WHITE CHARACTERS APPROX WHERE SHOWN PER ND1002019

REV	DESCRIPTION	DATE	BY	CHK
A				
B	REVISED PER TDRR/8347 DR J. Lee CHK C.B.S.			
C	REVISED PER TDRR 10042 DR P. Bankson CHK R.C.B.	8/11/66		

R-1733 A

QTY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM NO.
560	10F6774	INSULATOR, WRAPOST, FEMALE	3
560	1006781-4	CONTACT, WRAPOST, FEMALE	2
1	1004584-1	PLATE	1

LIST OF MATERIALS

SEE NOTE 1

1003544		HEAT TREATMENT: NONE	
NEXT ASSY	USED ON	FINISH: SEE NOTE 6	
APPLICATION			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ±1/64 DECIMALS .XX ±.01 .XXX ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 1

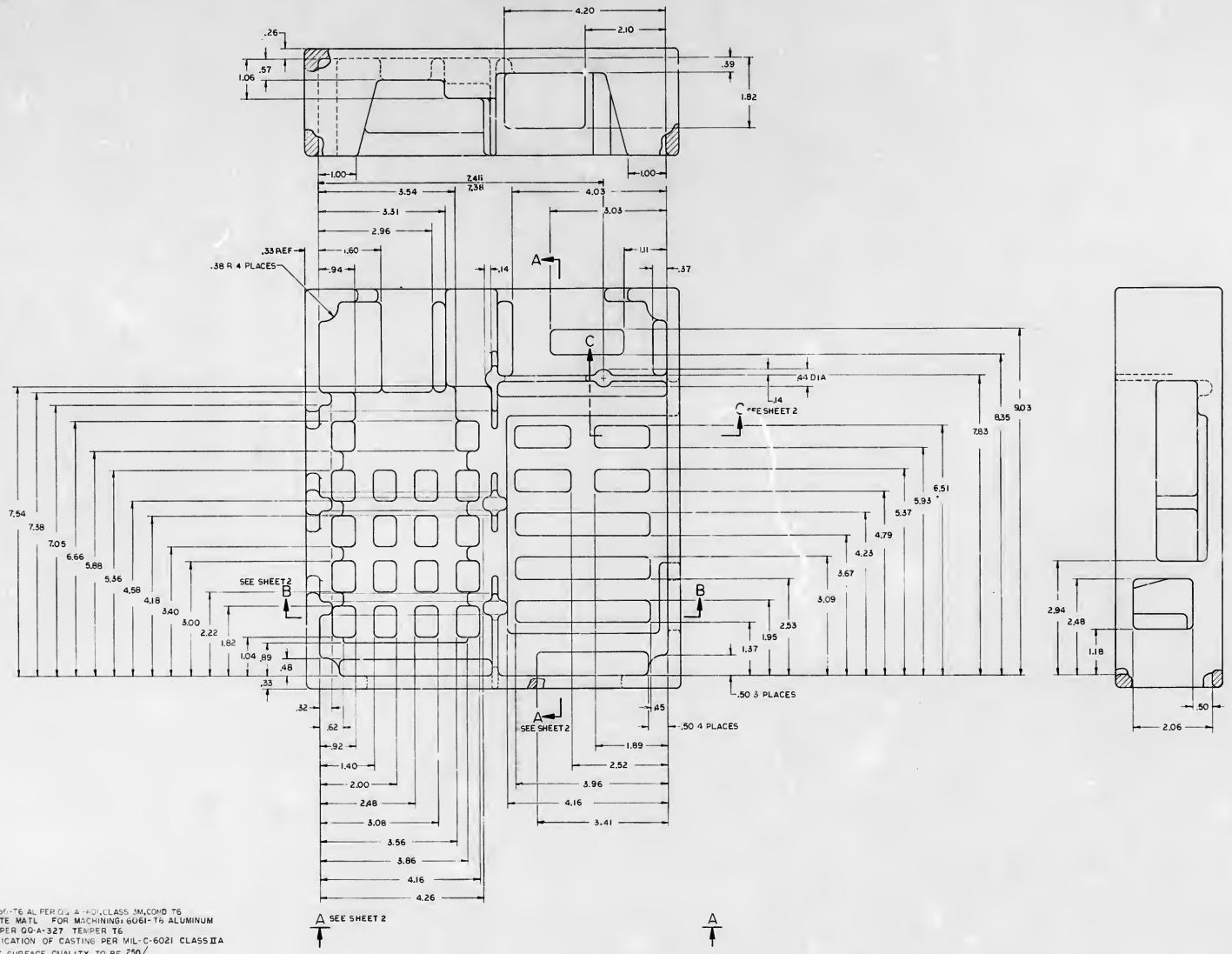
MSC	MANNED SPACECRAFT CENTER, HOUSTON, TEXAS
DRAWN	R. Rowe 4/20/66
DESIGNED	R. Rowe 4/20/66
APPROVED	B.S. Lee DATE 10 OCT 66
APPROVED	Glen S. Heald 10 Oct 66
MSC APPROVAL	
INT APPROVAL	
INT APPROVAL	

PLATE, CONN.
RELAY HOUSING
AGC DSKY MAIN

CODE IDENT NO.	SIZE	MSC DRAWING NO.
	J	1004584

SCALE 2/1 WT SHEET 1 OF

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 07259 DR CHK	11/23/66	
B	REVISED PER TDRR 07644 DR CHK	4/3/67	
C	REVISED PER TDRR 14732 DR CHK	2/26/68	



NOTES:
1. MATL: 356-T6 AL PER QQ-A-601, CLASS 3M, COND T6
   ALTERNATE MATL FOR MACHINING: 6061-T6 ALUMINUM ALLOY PER QQ-A-327 TEMPER T6
2. CLASSIFICATION OF CASTING PER MIL-C-6021 CLASS IIA
3. AS CAST SURFACE QUALITY TO BE 250
4. ALL FILLETS & ROUNDS TO BE .06/.18 R UNLESS OTHERWISE SPECIFIED
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		LIST OF MATERIALS	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± .03 ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB Cambridge Mass. DRAWN G. Jarrell DATE 6/26/67 CHECKED APPROVAL APPROVAL
		MATERIAL SEE NOTE 1	
1004151		HEAT TREATMENT NONE	NASA APPROVAL
NEXT ASSY	USED ON	FINAL FINISH NONE	M.I.T. APPROVAL
APPLICATION			M.I.T. APPROVAL

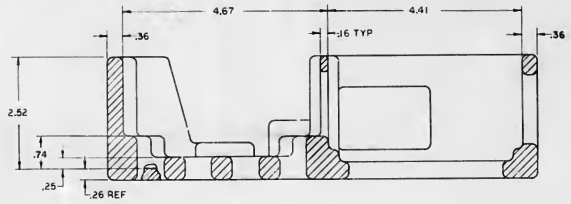
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CASTING
FRONT PANEL HOUSING
AGC DSKY MAIN

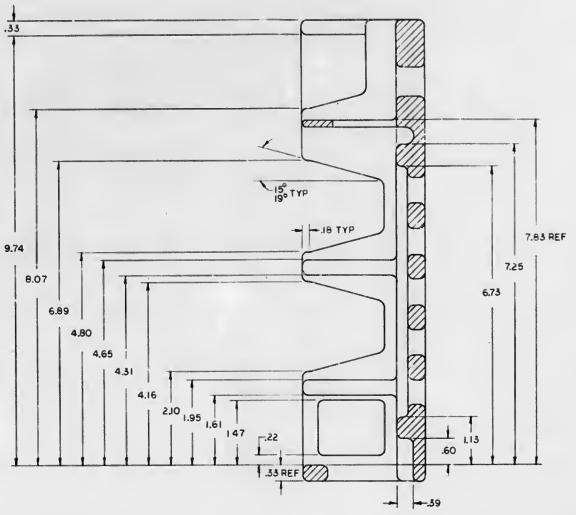
CODE IDENT NO	SIZE	NASA & MITNO NO
	E	1004586
SCALE 1/1	WT	SHEET 1 OF 2

1004586 rc

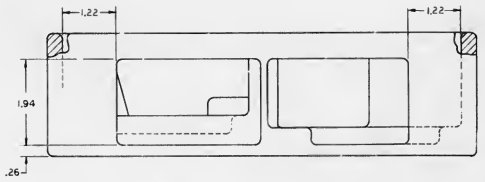
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 07259 DR CHK		
B	REVISED PER TDRR 07644 DR CHK		
C	REVISED PER TDRR 14732 DR CHK		



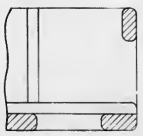
SECTION B-B



SECTION A-A
SEE SHEET 1



VIEW A-A



PARTIAL SECTION C-C

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

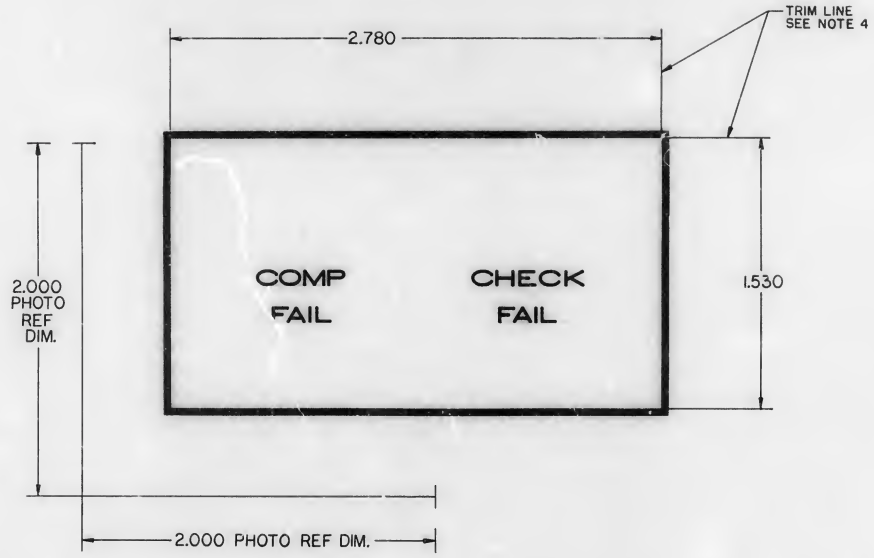
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.03 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH
NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
DRAWN DP 22OCT68
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CASTING
FRONT PANEL HOUSING
AGC DSKY MAIN

CODE IDENT NO | SIZE E | NASA DRAWING NO 1004586
SCALE 1/1 | WT | SHEET 2 OF 2



NOTES:
1. MATERIAL:.006/.008 THICK PLASTIC SHEET, SENSITIZED, DIMENSIONALLY STABLE PER L-F-340, TYPE 1B, CLASS 2, STYLE 1A
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. THE ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER FOOT
4. CUT TO WITHIN .010 OF TRIM LINE
5. MAKE PHOTOGRAPHIC MASTER NEGATIVE AND POSITIVE FILMS TO TO DIMENSIONS SHOWN

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS .020 ANGLES ± DO NOT SCALE THIS DRAWING MATERIAL SEE NOTE 1 HEAT TREATMENT NONE FINAL FINISH NONE	MIT INSTRUMENTATION LAB Cambridge, Mass. DRAWN [illegible] DATE 12 Nov 63 CHECKED [illegible] DATE 12 Nov 63 APPROVAL APPROVAL [illegible] 22 Nov 63 NASA APPROVAL [illegible] 11/26/63 MIT APPROVAL [illegible] 26 Nov 63
1003540 NEXT ASSY	USED ON APPLICATION		MANNED SPACECRAFT CENTER HOUSTON, TEXAS

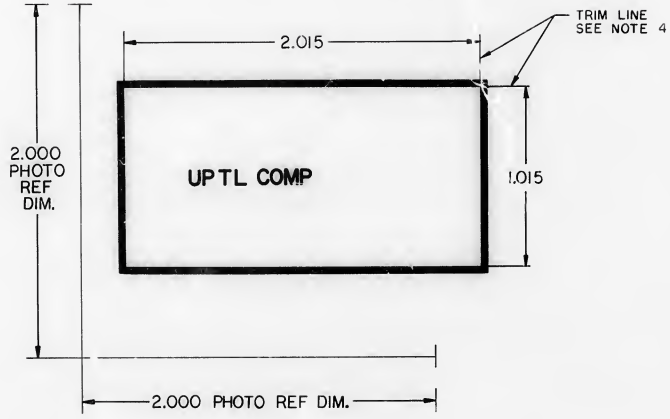
INSULATOR, FRONT
INDICATOR DISPLAY
AGC DSKY, MAIN

CODE IDENT NO. — SIZE E — NASA DRAWING NO. 1004589
SCALE 4/1 WT SHEET 1 OF 1

1004589

1004590

SYM	DESCRIPTION	DATE	APPROVAL

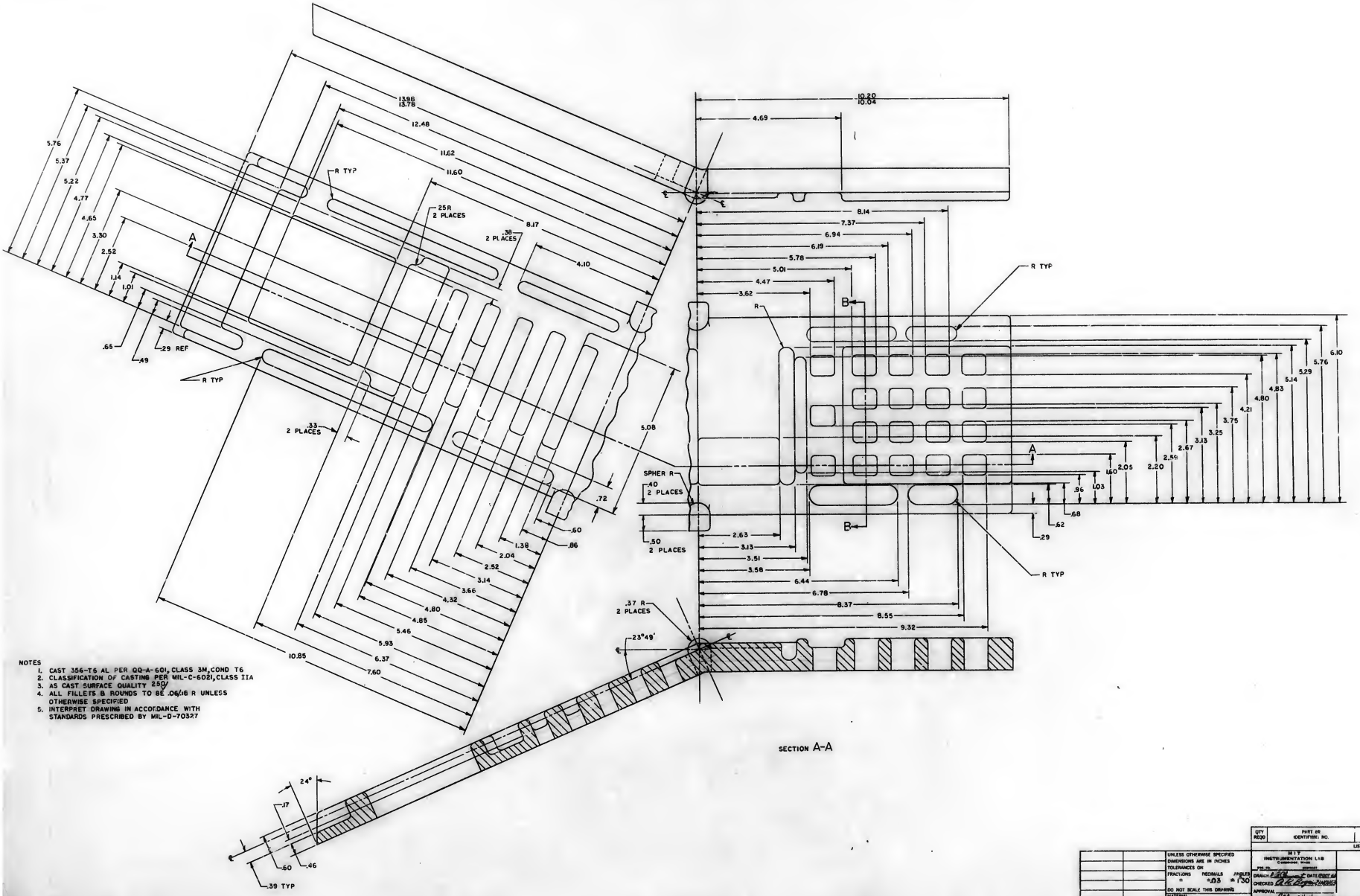


NOTES
1. MATERIAL:.006/.008 THICK PLASTIC SHEET, SENSITIZED, DIMENSIONALLY STABLE PER L-F-340, TYPE IB, CLASS 2, STYLE IA
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. THE ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER FOOT
4. CUT TO WITHIN .010 OF TRIM LINE
5. MAKE PHOTOGRAPHIC MASTER NEGATIVE AND POSITIVE FILMS TO DIMENSIONS SHOWN

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ±.020 ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS. DWG. NO. 1004590 CRAWN R. Bennett DATE 4-24-63 CHECKED R. Edwards 4-26-63 APPROVAL APPROVAL Eldon C. Hall 4-26-63 NASA APPROVAL R.M. Lust 4/29/63 MIT APPROVAL L. Nakatani 4/29/63
		DO NOT SCALE THIS DRAWING	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		MATERIAL SEE NOTE 1	INSULATOR, FRONT PROGRAM DISPLAY AGC DSKY MAIN & NAV
1003542		HEAT TREATMENT NONE	CODE IDENT. NO. — SIZE E NASA DRAWING NO. 1004590
NEXT ASSY	USED ON	FINAL FINISH NONE	SCALE 4/1 WT SHEET 1 OF 1
APPLICATION			

1004590



NOTES
1. CAST 356-T6 AL PER QQ-A-601, CLASS 3M, COND T6
2. CLASSIFICATION OF CASTING PER MIL-C-6021, CLASS IIA
3. AS CAST SURFACE QUALITY 250
4. ALL FILLETS & ROUNDS TO BE .06/.16 R UNLESS OTHERWISE SPECIFIED
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
		LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± , DECIMALS ± .03, ANGLES ± 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 1
HEAT TREATMENT: NONE
FINAL FINISH: NONE
1004141 — NEXT ASSY — USED ON — APPLICATION

ITT INSTRUMENTATION LAB
DRAWN [illegible] DATE 6/27/66
CHECKED [illegible]
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

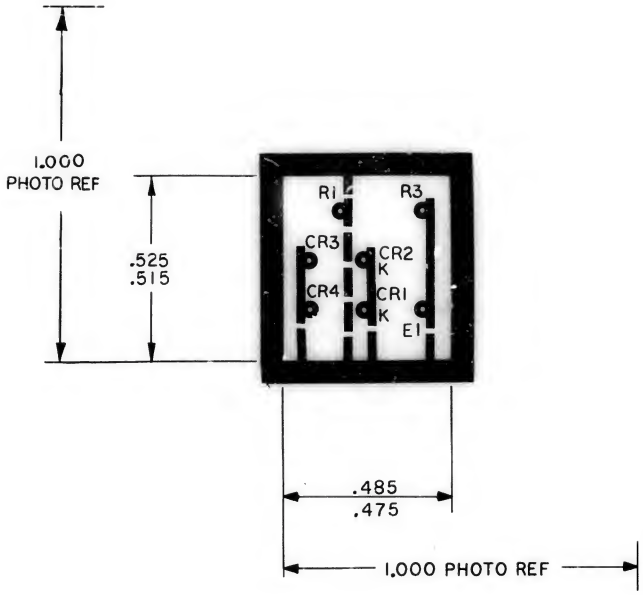
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CASTING FRONT PANEL AGC DSKY NAV

CODE IDENT NO. — SIZE J — NASA DRAWING NO. 1004593
SCALE 1/1 — WT — SHEET 1 OF 1

1004594

REVISIONS 05178			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES:

1. MATL:.006/.008 THICK PLASTIC SHEET, SENSITIZED DIMENSIONALLY STABLE PER L-F-340, TYPE IB, CLASS II, STYLE IA
2. THE ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER FOOT.
3. MAKE PHOTOGRAPHIC MASTER NEGATIVE AND POSITIVE FILMS TO DIMENSIONS SHOWN
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
5. BROKEN LINE DENOTES SLEEVING
6. ● DENOTES .038/.042 DIA HOLE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL: SEE NOTE 1

HEAT TREATMENT: NONE

FINISH: NONE

1003532 | NEXT ASSY | USED ON | APPLICATION

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG. NO. | CONTRACT

DRAWN J.C. Lemmon DATE 27 Nov 63
CHECKED D.R. Bogue 2 DEC 63
APPROVAL
APPROVAL E.D. Copps 12-16-63
NASA APPROVAL 11/27/63
MIT APPROVAL
MIT APPROVAL 12/17/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

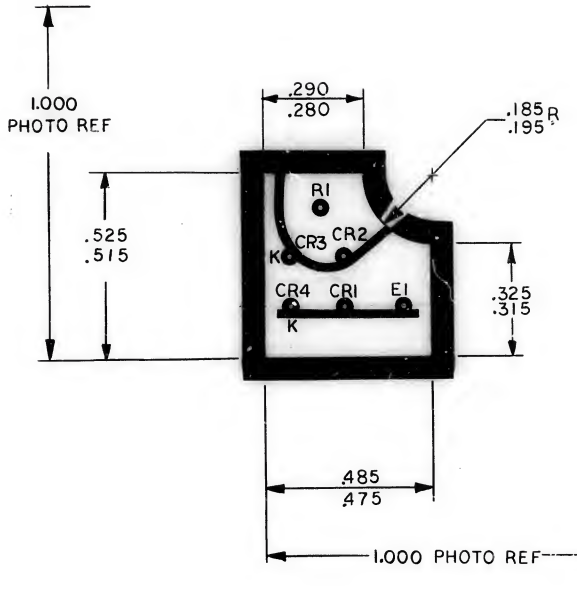
INSULATOR, BACK
POWER SUPPLY
AGC DSKY NAV & MAIN

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004594

SCALE 4/1 | WT | SHEET 1 OF 1

1004595

REVISIONS 05/28			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES

1. MATL: .006/.008 THICK PLASTIC SHEET, SENSITIZED DIMENSIONALLY STABLE PER L-F-340, TYPE IB, CLASS II, STYLE IA
2. THE ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER FOOT.
3. MAKE PHOTOGRAPHIC MASTER NEGATIVE AND POSITIVE FILMS TO DIMENSIONS SHOWN
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
5. BROKEN LINE DENOTES SLEEVING
6. ● DENOTES .063/.067 DIA HOLE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1003532	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 1
HEAT TREATMENT: NONE
FINAL FINISH: NONE

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN J.C. Emmons DATE 11 DEC 63
CHECKED A.R. Bogni 2 DEC 63
APPROVAL
APPROVAL E.L. Dahlgren 14 DEC 63
NASA APPROVAL W.H. Richards 14 DEC 63
MIT APPROVAL
MIT APPROVAL D. Wahl 12/17/63

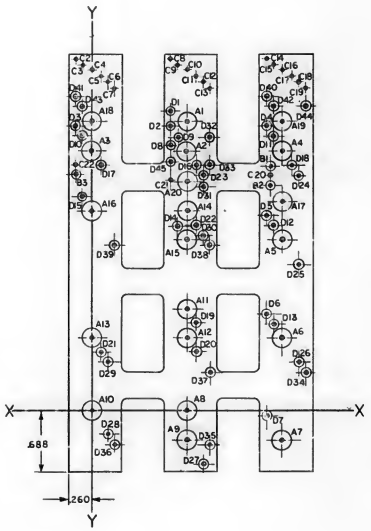
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

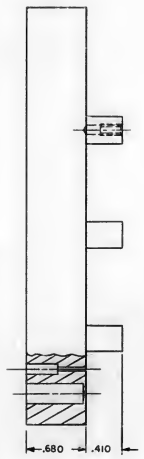
INSULATOR, FRONT
POWER SUPPLY
AGC DSKY NAV & MAIN

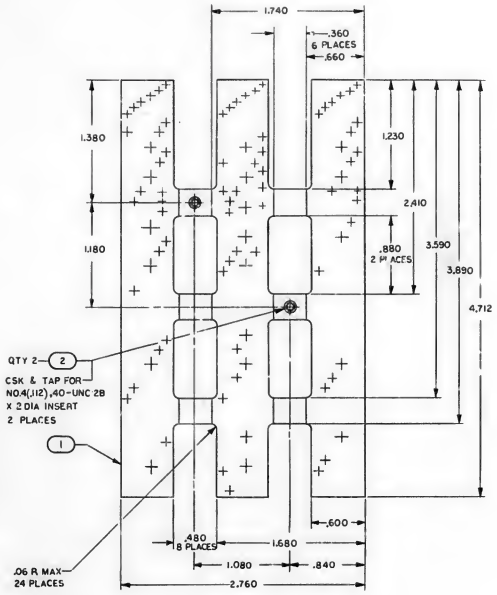
CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004595
SCALE 4/1	WT	SHEET 1 OF 1

REVISIONS			
SYM	DESCRIPTION	BY	APPROVAL

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⊕DIM	HOLE DIA	C'BORE DEPTH
A1	1.076	3.270			
A2	1.076	2.938			
A3	0.000	2.938			
A4	2.160	2.938			
A5	2.160	1.922			
A6	2.160	0.820			
A7	2.160	-0.332			
A8	1.076	0.000			
A9	1.076	-0.332			
A10	0.000	0.000		.035	
A11	1.076	1.152	.006	.038 THRU & C'BORE .202 .206	.650
A12	1.076	0.820			
A13	0.000	0.820			
A14	1.076	2.254			
A15	1.076	1.922			
A16	0.000	2.254			
A17	2.160	2.370			
A18	0.000	3.270			
A19	2.160	3.270			
A20	1.076	2.598			
B1	2.020	2.776			
B2	2.020	2.548		.035	
B3	-0.184	2.662	.006	.038 THRU & C'BORE .108 .112	.350
C2	-0.184	3.974			
C3	-0.104	3.904			
C4	0.000	3.840			
C5	0.104	3.780			
C6	0.184	3.712			
C7	0.258	3.648			
C8	0.892	3.974			
C9	0.972	3.904			
C10	1.076	3.840			
C11	1.184	3.780			
C12	1.262	3.712	.006	.035 .038	THRU
C13	1.338	3.648			
C14	1.976	3.974			
C15	2.056	3.904			
C16	2.160	3.840			
C17	2.264	3.780			
C18	2.344	3.712			
C19	2.420	3.648			
C20	2.020	2.662			
C21	0.892	2.600			
C22	-0.184	2.776			
D1	0.892	3.380			
D2	0.892	3.214			
D3	-0.184	3.214			
D4	1.976	3.214			
D5	1.976	2.200			
D6	1.976	1.094			
D7	1.976	-0.060			
D8	0.892	2.940			
D9	0.972	3.094			
D10	-0.104	3.094			
D11	2.056	3.104			
D12	2.056	2.084			
D13	2.056	0.978			
D14	0.972	2.084			
D15	-0.104	2.416			
D16	1.184	2.776			
D17	0.104	2.776			
D18	2.264	2.776			
D19	1.184	0.992			
D20	1.184	0.664			
D21	0.104	0.664		.035	
D22	1.184	2.100		.038	
D23	1.262	2.662	.006	THRU & C'BORE .108 .112	.350
D24	2.344	2.662			
D25	2.344	1.656			
D26	2.344	0.552			
D27	1.262	-0.608			
D28	0.184	-0.270			
D29	0.184	0.552			
D30	1.262	1.984			
D31	1.262	2.526			
D32	1.338	3.094			
D33	1.338	2.776			
D34	2.420	0.430			
D35	1.338	-0.350			
D36	0.258	-0.382			
D37	1.338	0.450			
D38	1.338	1.868			
D39	0.258	1.868			
D40	1.976	3.546			
D41	-0.184	3.546			
D42	2.056	3.436			
D43	-0.104	3.436			
D44	2.420	3.436			
D45	0.892	2.796			







NOTES:
1. MAT'L: PLASTIC, CLEAR ACRYLIC PER MIL-P-8184 FINISH B, ALT MIL-P-5425 FINISH B
2. TRUE POSITION AS SHOWN IN CHART
3. REMOVE ALL SHARP EDGES
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
2	MS21209-C0420	INSERT, SCREW THREAD LOCKING	2
1	1004596-1	BLOCK	1

LIST OF MATERIALS

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± .005 ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB Cambridge Mass. DRAWN GPD DATE 12/6/63 CHECKED C.D.C. Bryan 20DEC63 APPROVAL APPROVAL Allen Mitchell 22 Dec 63
1003549		MATERIAL SEE NOTE 1	NASA APPROVAL
1003548		HEAT TREATMENT NONE	MIT APPROVAL
NEXT ASSY	USED ON	FINAL FINISH NONE	SCALE 2/1
APPLICATION			

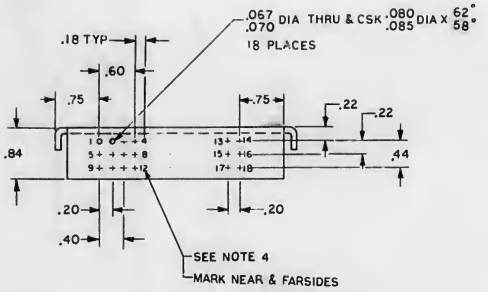
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

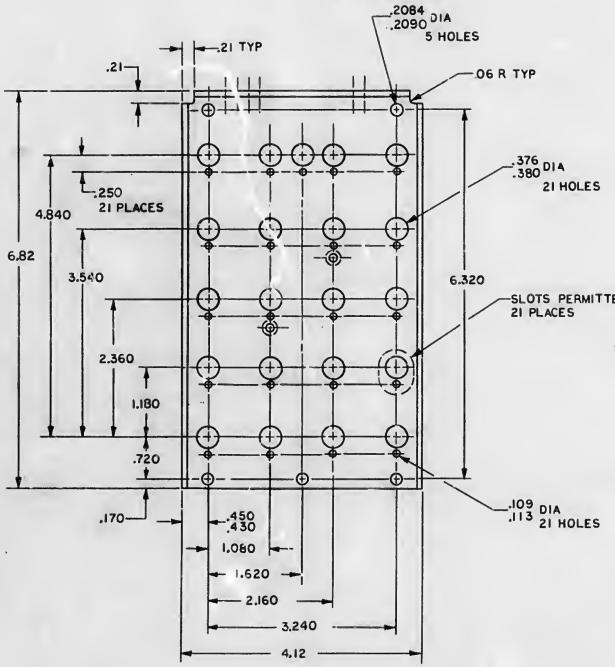
BLOCK, COMPONENT KEYBOARD MODULE AGC DSKY, MAIN & NAV

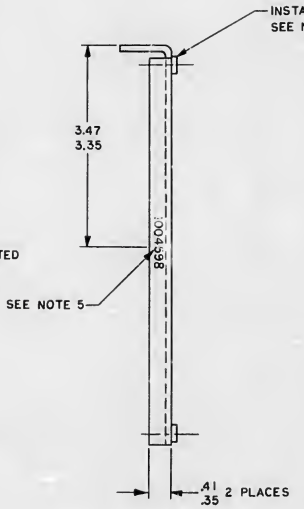
CODE IDENT NO.	SIZE	NASA DRAWING NO.
	E	1004596

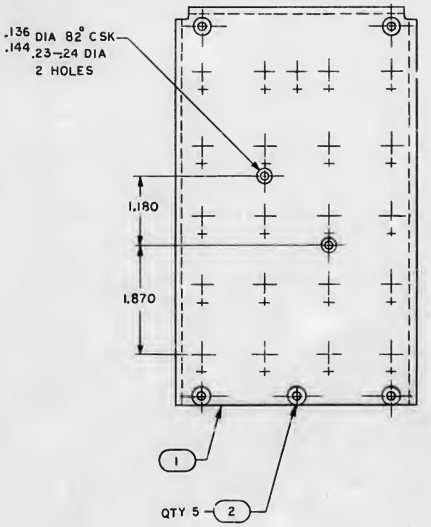
WT | SHEET 1 OF 1

REVISIONS 05563			
SYM	DESCRIPTION	DATE	APPROVAL









NOTES:

1. MATL: .090 THK AL5052-H32 PER QQ-A-318, TEMPER H32
2. REMOVE BURRS AND SHARP EDGES
3. INSTALL FIND 2 AND ANODIZE PER MIL-A-8625, TYPE II, DYED BLACK
4. MARK .08 HIGH WHITE PER ND1002019 & ND1002122, TYPE II, CLASS 1, APPROX WHERE SHOWN
5. MARK .12 HIGH WHITE PER ND1002019 & ND1002122, TYPE II, CLASS 1
6. ALL BEND R.05/.09
7. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
5	1004501	SPACER	2
1	1004598-1	PANEL, FRONT	1

LIST OF MATERIALS

1003548	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± .02 .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 1
HEAT TREATMENT: NONE
FINAL FINISH: SEE NOTE 3

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG. NO. — CONTRACT —
DRAWN J. Cosgrove DATE 3/27/63
CHECKED R. E. Boggs 1/30/63
APPROVAL —
APPROVAL E. C. Hall 21 Jan 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PANEL, FRONT
KEYBOARD MODULE
AGC DSKY MAIN & NAV

NASA APPROVAL —
MIT APPROVAL —
MIT APPROVAL —

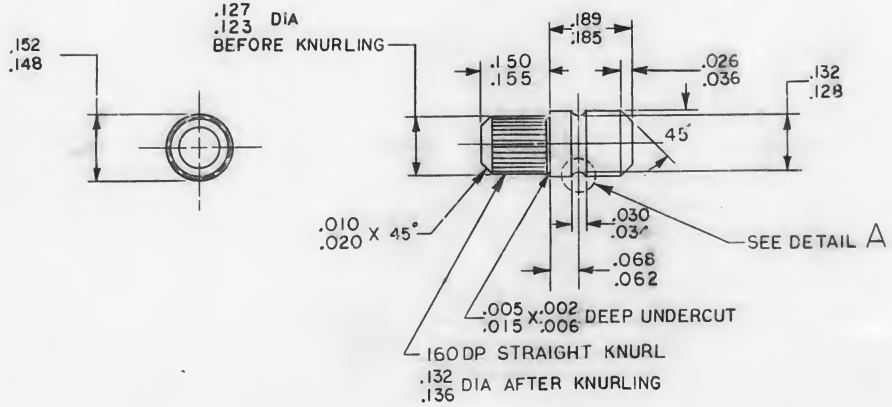
CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 1004598
SCALE 1/1
WT
SHEET 1 OF 1

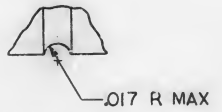
MASTER

1004598

— 1004599

REVISIONS 05563			
SYM	DESCRIPTION	DATE	APPRCVAL





DETAIL A
SCALE 10/1

NOTES:

1. MATL: 303 CRES PER QQ-S-763, CLASS 303, COND A
2. REMOVE ALL BURRS AND BREAK SHARP EDGES
3. PASSIVATE PER MIL-F-14072
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1004600	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ± 5°
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 1
HEAT TREATMENT
NONE
FINAL FINISH
SEE NOTE 3

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN J.L. Emmer DATE 10 Dec 63
CHECKED A.R. Bogni 17 DEC 63
APPROVAL
APPROVAL Eldred Hall 29 Jan 64
NASA APPROVAL [illegible] 1/25/64
MIT APPROVAL
MIT APPROVAL W. Kyffe 29 Jan 64

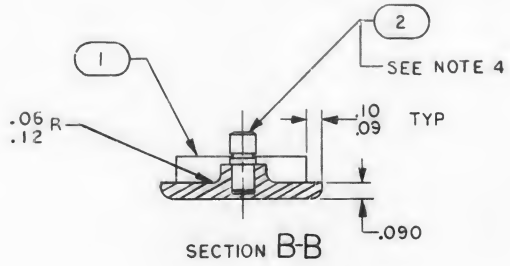
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PIN
AGC DSKY, MAIN & NAV

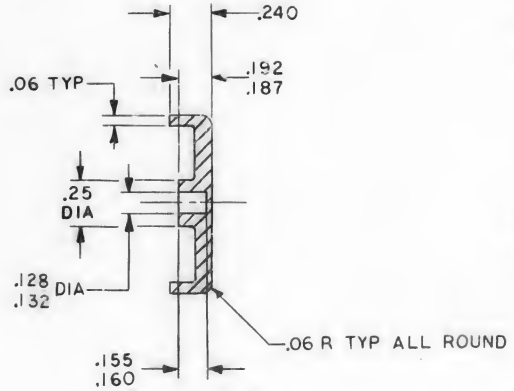
CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004599
SCALE 5/1	WT	SHEET 1 OF 1

B 1004600

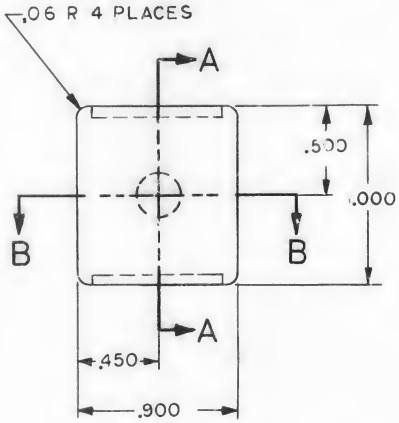
REVISIONS 05563			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 07832 DR [illegible] CHK A.R.B.	4/16/64	HWC
B	REVISED PER TDRR 20824 DR R.C. Taylor CHK R.B.A. 077	9/13/65	[illegible]



SECTION B-B



SECTION A-A



QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1004599	PIN	2
1	1004600-1	BUTTON, KEYBOARD	1

LIST OF MATERIALS

NOTES
1. MATL: ACRYLIC PER MIL-P-21105 TYPE II
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. AFTER ASSEMBLING OF FIND NO.2 TO FIND NO.1, FIND NO.2 IS TO WITHSTAND A PULLOUT FORCE OF 15LB MIN
4. BOND FIND NO.2 IN FIND NO.1 USING ND 1002004
5. COLOR PER FED-STD-595 COLOR CHIP NO.37875
6. BREAK ALL SHARP EDGES

1004602	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT NONE
FINAL FINISH NONE

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS. DWG. NO. CONTRACT

DRAWN J.C. Cameron DATE 15DEC63
CHECKED C.R. Boggia 18DEC63
APPROVAL
APPROVAL Eldon C. Hall 20 Jan 64
NASA APPROVAL [illegible] 1/17/64
MIT APPROVAL
MIT APPROVAL W.C. Taylor 29 Jan 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BUTTON, KEYBOARD MODULE AGC DSKY, MAIN & NAV

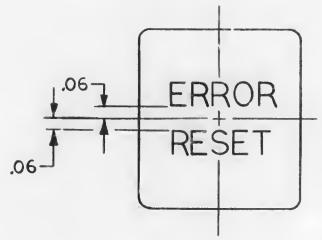
CODE IDENT NO.	SIZE	NASA DRAWING NO.
80230	C	1004600
SCALE 2/1	WT	SHEET 1 OF 1

1004600

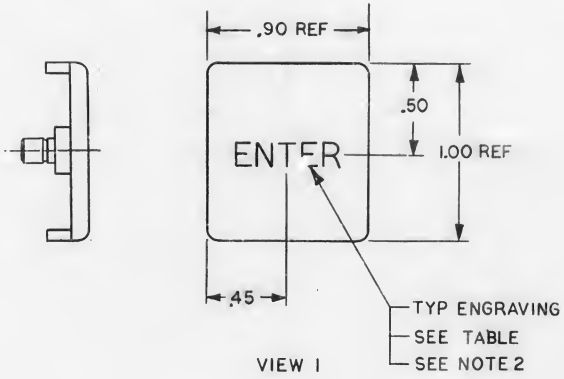
1004602

SYM	REVISIONS 05563 DESCRIPTION	DATE	APPROVAL

PART NO.	ENGRAVING	VIEW	HEIGHT
1004602-1	CLEAR	1	.12
-2	VERB	↑	↕
-3	NOUN	↕	↓
-4	ENTER	↕	.12
-5	+	↕	.38
-6	7	↕	↕
-7	8	↕	↓
-8	9	↕	.38
-9	-	↕	
-10	4	↕	.38
-11	5	↕	↕
-12	6	↕	↕
-13	0	↕	↕
-14	1	↕	↕
-15	2	↓	↓
-16	3	1	.38
-17	TEST ALARM	2	.12
-18	ERROR RESET	2	.12
-19	KEY RLSE	2	.12



VIEW 2



VIEW 1

NOTES

1. MATL: MAKE FROM PART NO. 1004600
2. ENGRAVE CHARACTERS .010/.016 DEEP PER ND1002019 AND FILL FLUSH TO SURFACE WITH MATERIAL PER ND1002130, COLOR BLACK PER FED-STD-595, CHIP NO 37038
3. INTERPRET DRAWING IN ACCORDANCE TO STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

1003548	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 1
HEAT TREATMENT NONE
FINAL FINISH NONE

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN J. Greenwood DATE 13 Dec 63
CHECKED J.P. Bogni 17 DEC 63
APPROVAL
APPROVAL Eldon C Hall 29 Jan 64
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL W. Laffer 29 Jan 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BUTTON, ENGRAVED
KEYBOARD MODULE
AGC DSKY, MAIN & NAV

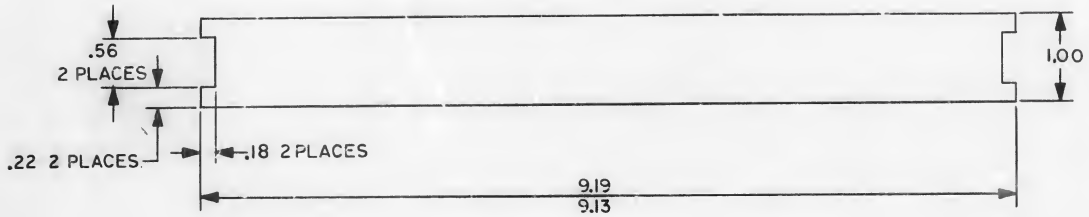
CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004602
SCALE 2/1	WT	SHEET 1 OF

MASTER

1004602

1004603

REVISIONS 05748			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES

1. MATL: .006/.008 THICK PLASTIC SHEET, SENSITIZED, DIMENSIONALLY STABLE PER L-F-340, TYPE IB, CLASS 2, STYLE IA
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1003133	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 1
HEAT TREATMENT
NONE
FINAL FINISH
NONE

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

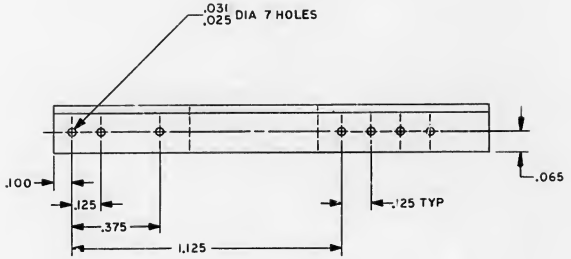
DRAWN P. Powers DATE 12 DEC 63
CHECKED C.R. Boggio 17DEC63
APPROVAL
APPROVAL Eldon C Hall 14 Jan 64
APPROVAL
NASA APPROVAL R.M. Lind 1/14/64
MIT APPROVAL
MIT APPROVAL L. Wolf, 1/14/64

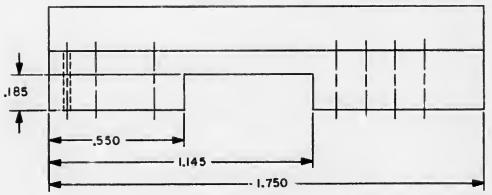
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

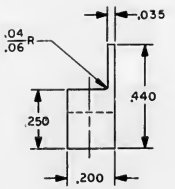
INSULATOR
ROPE MEMORY

CODE IDENT NO.	SIZE	NASA DRAWING NO.
———	C	1004603
SCALE 1/1	WT	SHEET 1 OF 1

REVISIONS 05178			
SYM	DESCRIPTION	DATE	APPROVAL







NOTES

1. MATL: PLASTIC SHEET PER MIL-P-18177, TYPE GEE
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

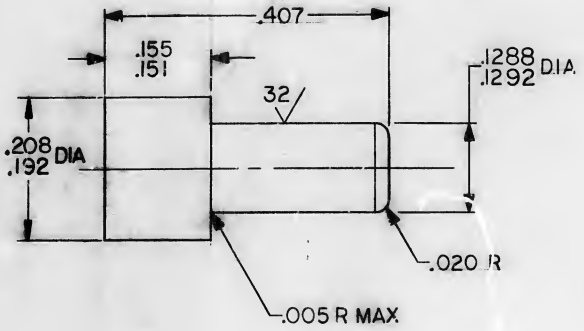
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ±.015 ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS. DWG. NO. CONTRACT	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		MATERIAL SEE NOTE 1	DRAWN P. Brazzel DATE 12 DEC 63	BLOCK, INSULATOR POWER SUPPLY AGC DSKY, MAIN & NAV
		HEAT TREATMENT NONE	CHECKED A.R. Eglin 13 DEC 63	
1003450		FINAL FINISH NONE	APPROVAL	
NEXT ASSY	USED ON		APPROVAL D.J. Duggan 13 DEC 63	
APPLICATION			APPROVAL	
			NASA APPROVAL	CODE IDENT NO. — SIZE D NASA DRAWING NO. 1004604
			MIT APPROVAL	SCALE 4/1 WT SHEET 1 OF 1
			MIT APPROVAL	

1004604

1004617 –

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
--	INITIAL RELEASE PER TDRR 06911	3/10/64	WJR



NOTES

1. MATL: 303 SST PER QQ-S-763, CL303, COND A
2. REMOVE BURRS AND SHARP EDGES
3. UNLESS OTHERWISE SPECIFIED, SURFACE QUALITY 125
4. PASSIVATE PER MIL-F-14072
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

MASTER

1003532	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 1
HEAT TREATMENT: NONE
FINAL FINISH: SEE NOTE 4

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DWG. NO. / CONTRACT

DRAWN: R. Desjarnais DATE 3 FEB 64
CHECKED: E. R. Bogan 5 FEB 64
APPROVAL:
APPROVAL: Colin C. Hall 14 Feb 64
NASA APPROVAL: [signature] 3/4/64
MIT APPROVAL:
MIT APPROVAL: W. Saffer 19 March 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PIN, LOCATING
POWER SUPPLY
AGC DSKY NAV & MAIN

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1004617

SCALE 8/1 WT SHEET 1 OF 1

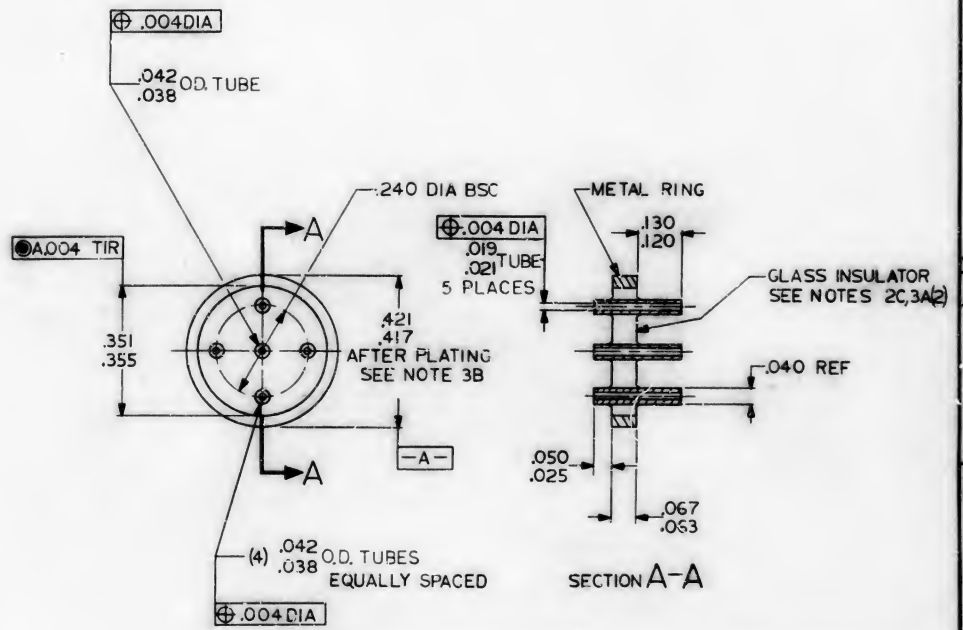
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
—		INITIAL RELEASE CLASS A PER TDRR 2036			6-23-65	

REQUIREMENTS:

1. GENERAL:
   - A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
   - B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS AS CONTAINED IN ND 1015404, CLASS 3.
   - C. MARKING: UNITS SHALL BE MARKED PER ND 1002019 WITH THE PART NUMBER (DRAWING NUMBER AND REVISION LETTER).
   - D. PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH ND 1002215, CLASS I, CODE 1.
     - (1) MARKING OF SHIPPING CONTAINERS SHALL CONFORM TO THE MARKING OF UNIT AND INTERMEDIATE PACKAGES AND THE METHODS OF MARKING SPECIFIED IN ND 1002215.

2. ACCEPTANCE AND INSPECTION: SAMPLE
   - A. MARKING AND PREPARATION FOR DELIVERY AS SPECIFIED ABOVE.
   - B. DIMENSIONS AND TOLERANCES AS SPECIFIED HEREIN.
   - C. HERMETIC SEAL BETWEEN METAL AND GLASS SHALL MEET THE REQUIREMENTS OF MIL-S-8484, GRADE A.
   - D. LEAKAGE RATE: THE LEAKAGE RATE SHALL NOT EXCEED ONE STANDARD CUBIC CENTIMETER OF AIR/YEAR/INCH OF SEAL AT A PRESSURE DIFFERENTIAL OF ONE ATMOSPHERE.
   - E. VENDOR SUPPLIED DATA: THE FOLLOWING DATA SHALL BE SUPPLIED BY THE VENDOR WITH EACH SHIPMENT.
     - (1) A CERTIFICATE OF COMPLIANCE WITH MIL-S-8484 GRADE A.
     - (2) A CERTIFICATE OF COMPLIANCE WITH ND 1015404 CLASS 3.
     - (3) LEAKAGE RATE TEST DATA.
     - (4) A CERTIFICATE OF COMPLIANCE WITH FINISH REQUIREMENTS.

3. DESIGN:
   - A. MATERIAL:
     - (1) MOUNTING RING AND TUBES: METAL ALLOY SUITABLE FOR THE PURPOSE.
     - (2) INSULATOR: GLASS SUITABLE FOR THE PURPOSE.
   - B. FINISH: METAL SURFACES SHALL BE TIN PLATED PER MIL-T-10727, TYPE I (ELECTRODEPOSITED). THICKNESS OF TIN PLATE SHALL BE .0004 TO .0006 INCH.



PROCURE ONLY FROM APPROVED SOURCES LISTED IN ND 1002034 FOR THIS DRAWING.

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

SEE NOTE

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN [illegible] 5/27/65
CHECKED [illegible] 6/2/65
APPROVED
APPROVED [illegible] 21 June 65
APPROVED MIT [illegible] 22 June 65
APPROVED MSC [illegible] 6/24/65
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

HEADER, FEED THRU TERMINAL HERMETICALLY SEALED

SPECIFICATION CONTROL DRAWING

CODE IDENT NO.	SIZE	DRAWING NO.
80230	C	1006354

SCALE NONE SHEET 1 OF 1

A 1006826

REVISIONS 01768			
SYM	DESCRIPTION	DATE	APPROVAL
—			
A	REVISED PER TDRR 04908	12/10/63	EAK

REQUIREMENTS:

1. GENERAL:
   - A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
   - B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS AS CONTAINED IN ND 1015404, CLASS 3.
   - C. MARKING: REELS OR SPOOLS AND UNIT PACKAGING SHALL BE MARKED IN ACCORDANCE WITH MIL-STD-129 WITH THE MANUFACTURER'S NAME, PART NUMBER, ITEM DESCRIPTION, LENGTH AND WIDTH, NASA DRAWING NUMBER, REVISION LETTER, DASH NUMBER AND DATE OF EXPIRATION.
2. ACCEPTANCE AND INSPECTION: (SAMPLE)
   - A. MECHANICAL PROPERTIES:
     - (1) THICKNESS WITH ADHESIVE, LESS PROTECTIVE COVERING: 0.0075 PLUS OR MINUS 0.0005 INCH.
     - (2) LENGTH: 1000 FEET PLUS 1 FOOT MINUS ZERO.
3. DESIGN:
   - A. MECHANICAL PROPERTIES:
     - (1) ADHESIVE STRENGTH: 25 POUNDS PER SQUARE INCH MINIMUM.
     - (2) ELONGATION AT BREAK: 400 PERCENT.
   - B. ELECTRICAL CHARACTERISTICS:
     - (1) VOLTAGE STRENGTH: 400 VOLTS PER MIL MINIMUM.
     - (2) RESISTIVITY: 7×10^{12} OHMS PER CUBIC CENTIMETER.
     - (3) DIELECTRIC CONSTANT: 2.05 AT 1 KILOCYCLE.
   - C. THIS TAPE SHALL CONSIST OF A MYLAR BASE WITH AN ADHESIVE COATING ON ONE SIDE PROTECTED WITH A REMOVABLE PROTECTIVE COVERING.
   - D. STORAGE LIFE: THIS TAPE SHALL SHOW NO EVIDENCE OF DETERIORATION AFTER STORAGE FOR ONE YEAR MINIMUM AT 77 DEGREES FAHRENHEIT.

DASH NO.	WIDTH
-1	1.500 ± .005
-2	0.600 ± .005
-3	0.290 ± .010
-4	0.800 ± .005
-5	1.400 ± .005
-6	1.650 ± .010
-7	0.250 ± .005
-8	0.400 ± .010
-9	0.340 ± .010
-10	1.000 ± .010
-11	.700 ± .005
-12	.140 ± .010

PROCURE ONLY FROM APPROVED SOURCES LISTED IN ND 1002034 FOR THIS DRAWING.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTES
HEAT TREATMENT
FINAL FINISH

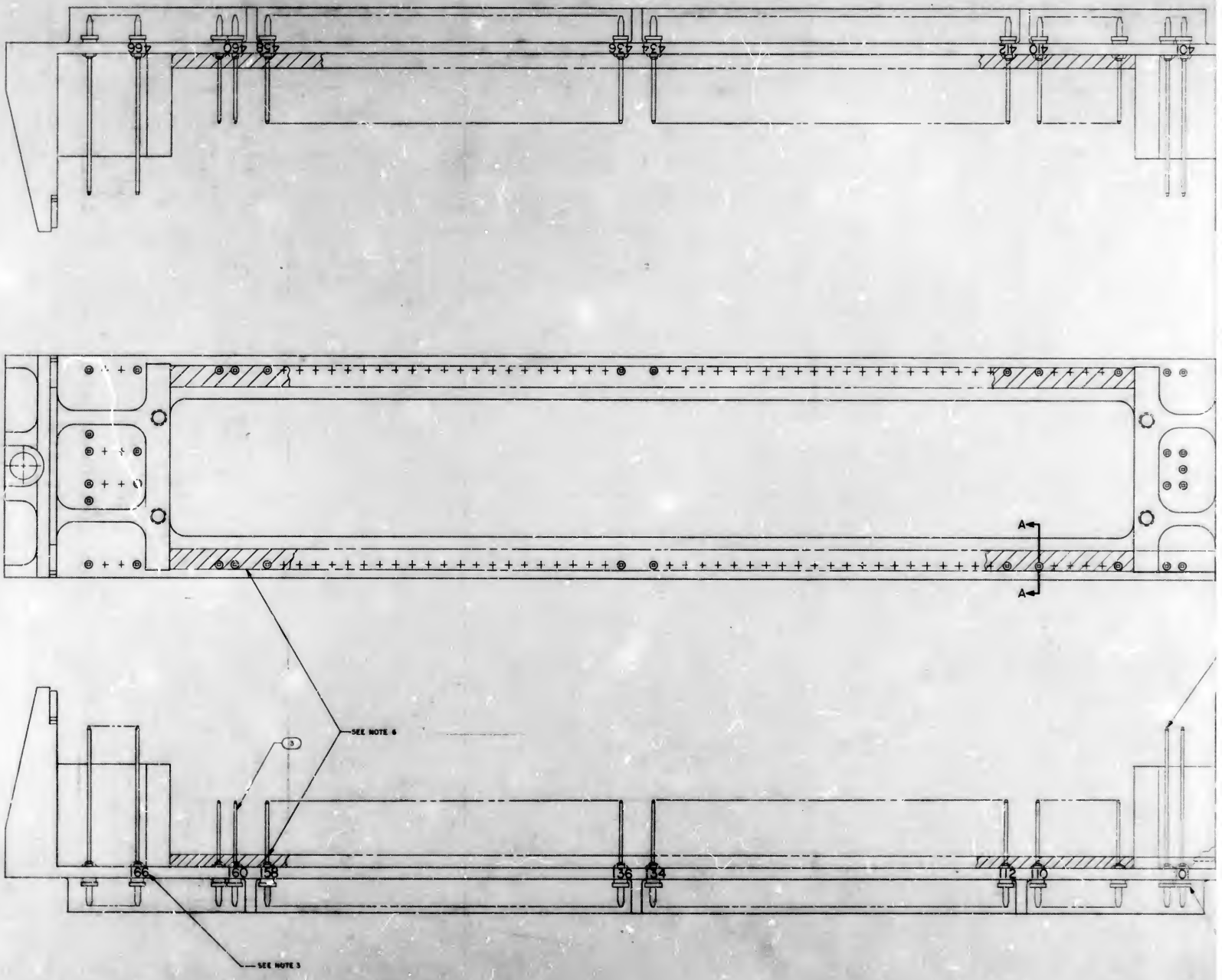
MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.
DRAWN DATE 12/6/63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

INSULATION TAPE, ELECTRICAL
PRESSURE SENSITIVE ADHESIVE (MYLAR)
SPECIFICATION CONTROL DRAWING

CODE IDENT NO.	SIZE	NASA DRAWING NO.
—	C	1006826

SCALE NONE WT SHEET 1 OF 1

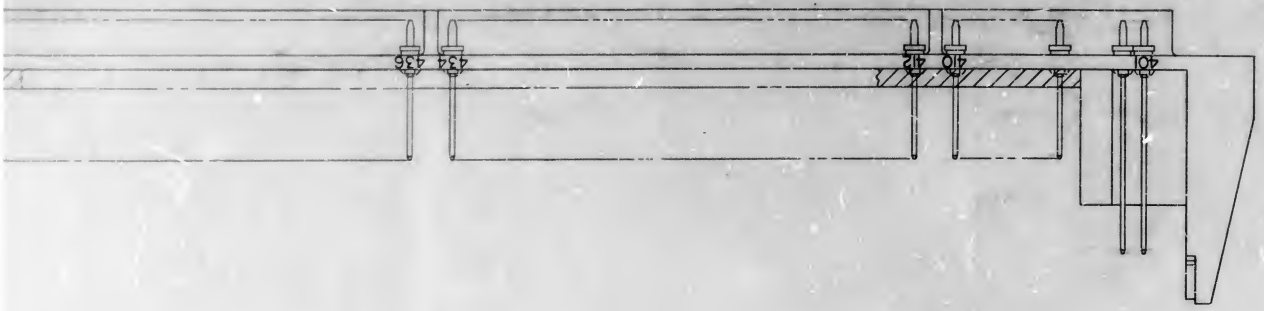


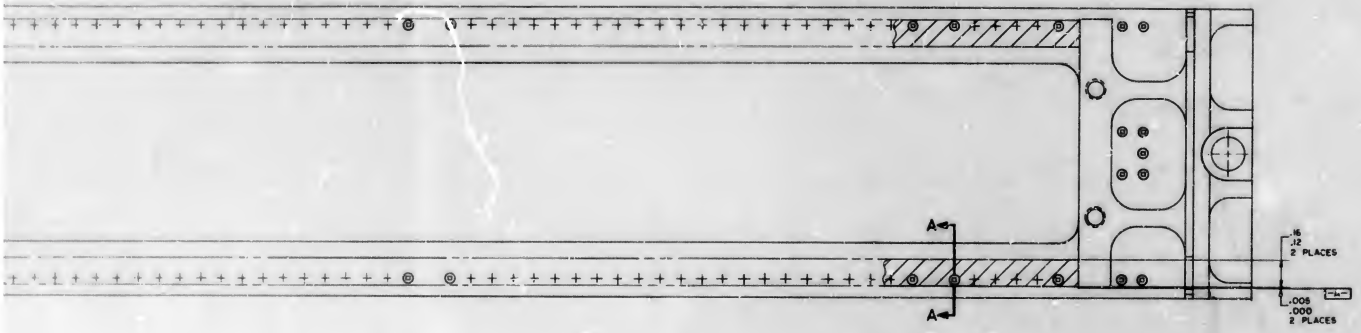
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-STD-7032.
2. ASSEMBLE FIND NO. 2, FIND NO. 3, AND FIND NO. 4 TO FIND NO. 1 PER ND1002136.
3. MARK $\frac{.09}{.04}$ HIGH WHITE CHARACTERS PER ND1002122 TYPE II CLASS 2 PER ND1050305 USING INK ID05271-11.
4. ICE [illegible] WITH PART NUMBER PER ND1002019.
5. SEAL FIND NO. 2, 3 & 4 TO FIND NO. 1 PER ND1002004, TYPE II.
6. BONDING MATERIAL TO BE APPLIED TO INDICATED AREAS PER ND1002004 USING TYPE II SEMI-RIGID MATERIAL, FINS TO BE FREE OF BONDING MATERIAL BEYOND INDICATED DIMENSIONS.

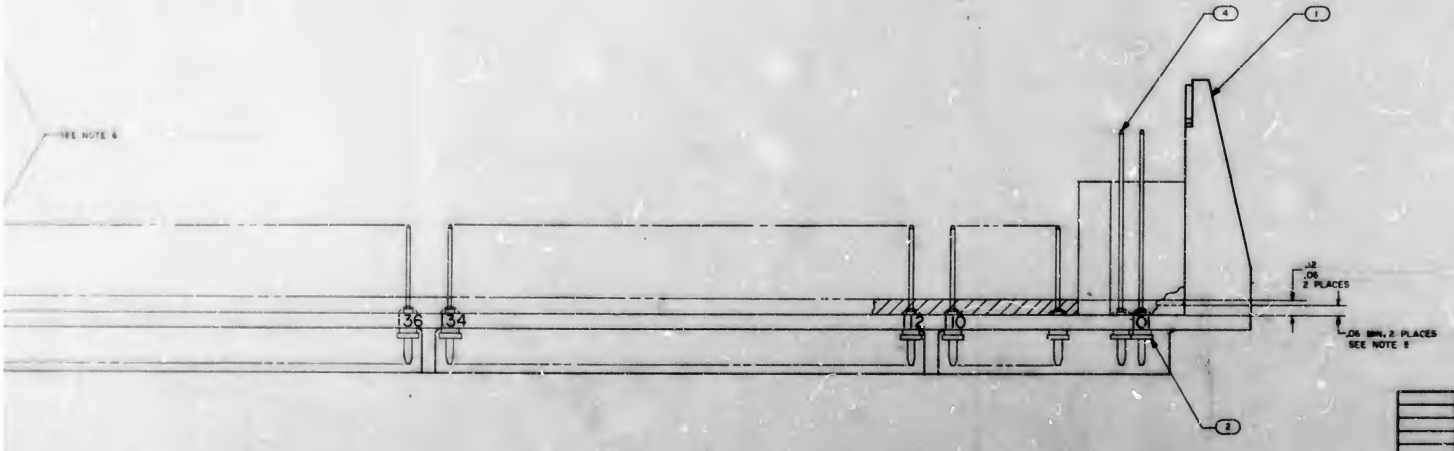
2003110 A

2003110 A





SECTION A-A



27	1006782-4	CONTACT ASSY-POST MALE W/NUT	4
105	1006782-2	CONTACT ASSY-POST MALE W/NUT	3
135	1006776	NAIL ASSY-HEADPOST-TAIL & W/NUT	2
1	2003110	HEADER HOUSING	1

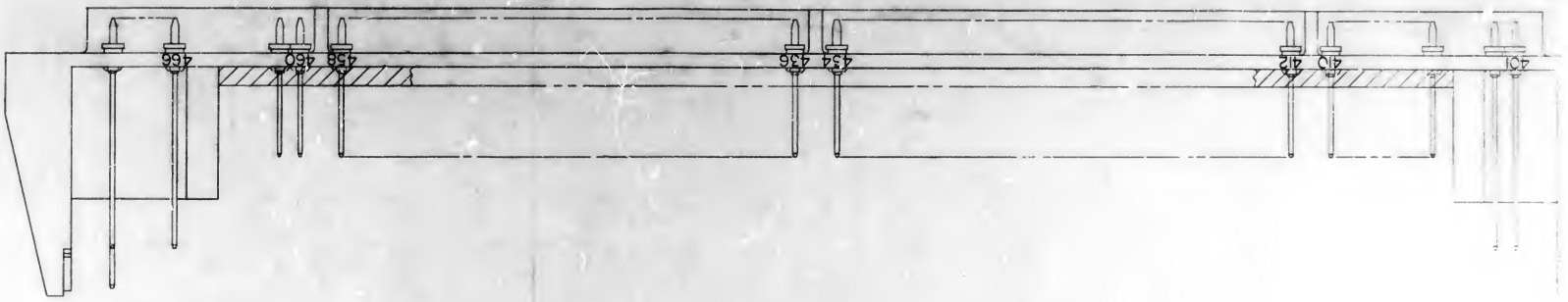
MIT INSTRUMENTATION LAB CAMBRIDGE MASS.

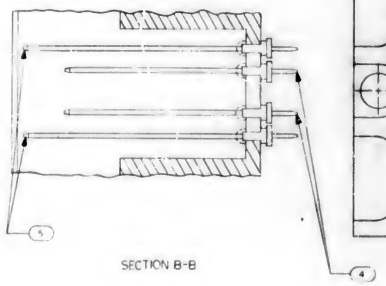
MANNED SPACECRAFT CENTER HOUSTON, TEXAS

HEADER HOUSING ASSY
ERASABLE MEMORY

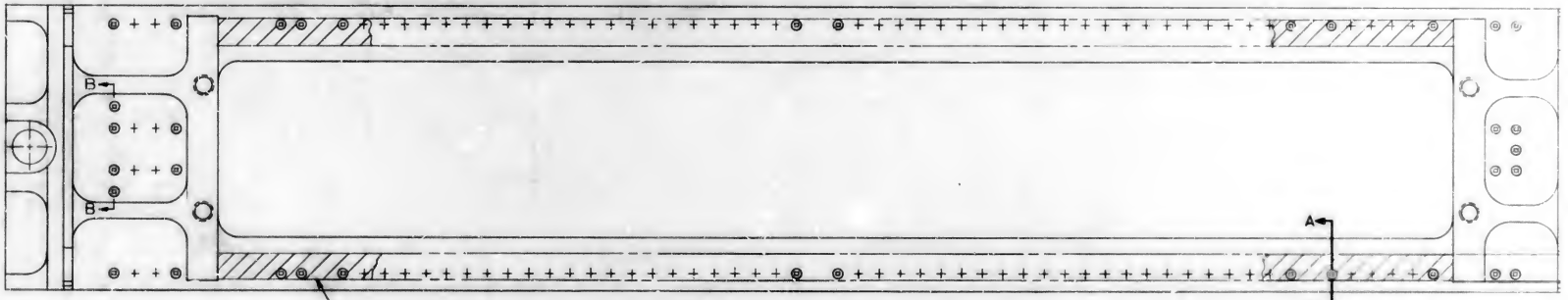
80230 J 2003110

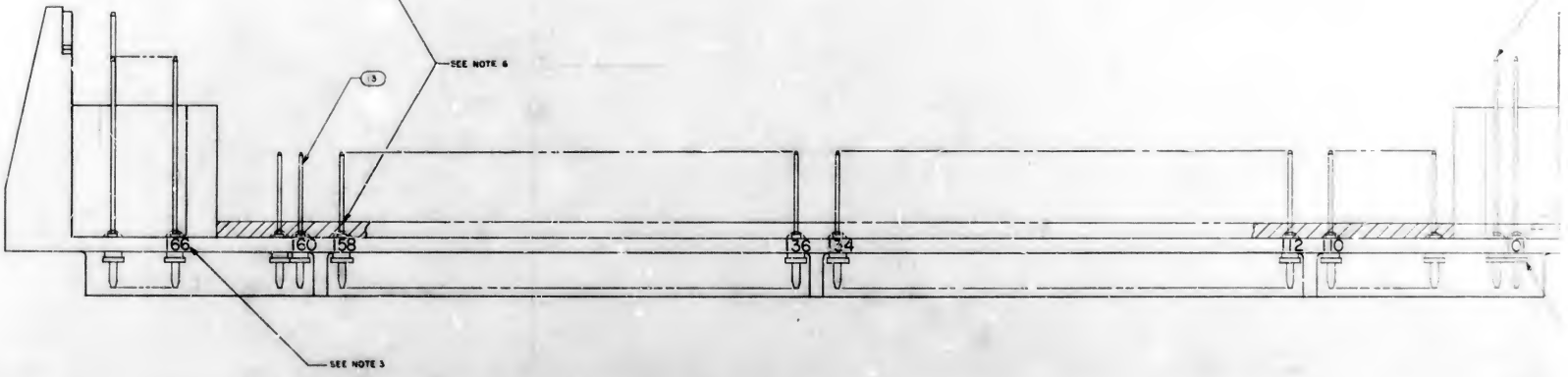
2003110 A





SECTION B-B





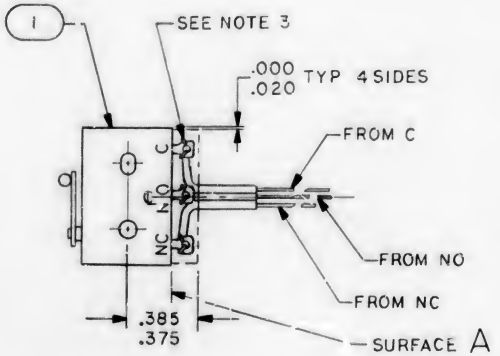
NOTES:

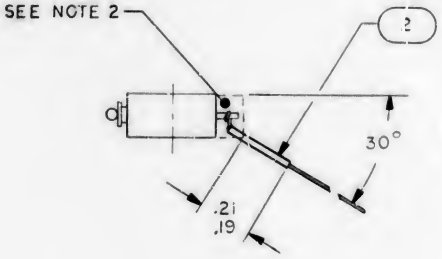
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NO 2, FIND NO 3, FIND NO 4 AND FIND NO 5 TO FIND NO 1 PER ND1002136
3. MARK $\frac{.08}{.06}$ HIGH WHITE CHARACTERS PER ND1002122 TYPE II CLASS 2 PER ND1002019 USING INK 10062711
4. IDENTIFY WITH PART NUMBER PER ND1002019
5. SEAL FIND NO 2, 3, 4 & 5 TO FIND NO 1 PER ND1008004, TYPE VI
6. BONDING MATERIAL TO BE APPLIED TO INDICATED AREAS PER ND1002004 USING TYPE II SEMI-RIGID MATERIAL, PINS TO BE FREE OF BONDING MATERIAL BEYOND INDICATED DIMENSIONS

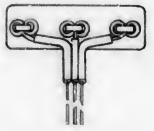
2003110	B

2003923 –

REVISIONS 20855					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED







VIEW SHOWN WITH POTTING REMOVED

NOTES

1. APPLY PRIMER TO SURFACE A AND SOLDERED TERMINALS USING 1006341
2. ENCAPSULATE PER NDI002009 TYPE C OR D
3. WRAP FIND NO. 2 TO TERMINALS OF FIND NO. 1 AS SHOWN AND SOLDER PER NDI002071 USING SOLDER PER NDI002075
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
5. IDENTIFY WITH DRAWING NO. AND REVISION PER NDI002019

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	2004957		CABLE, SPECIAL PURPOSE ELECTRICAL	2
1	1010901-2		SWITCH, SENSITIVE	1
011	LIST OF MATERIALS			

2003924	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ± 5°
DO NOT SCALE THIS DRAWING
MATERIAL

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

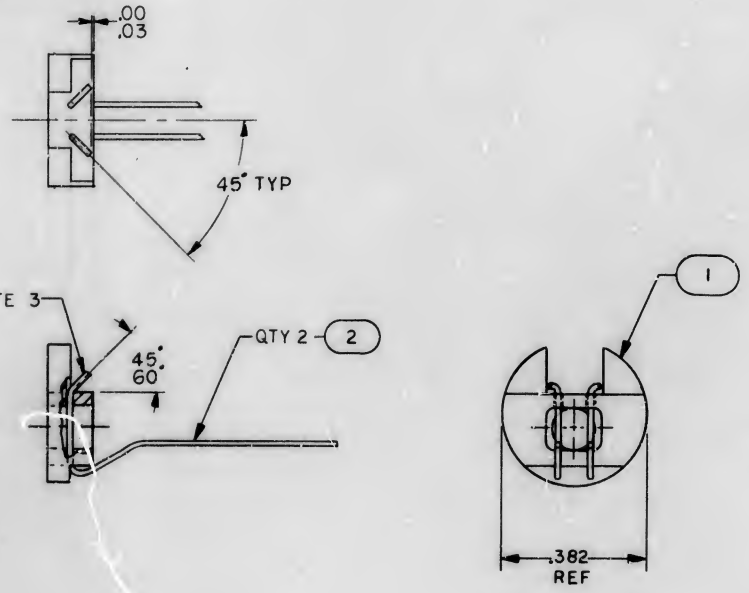
DRAWN	K W Simpson	3APR65
CHECKED	Hoger	8 Apr 65
APPROVED	[illegible]	12 June 65
APPROVED	Edgar C Hall	12 July 65
APPROVED MIT	M G Worley	7-13-65
APPROVED MSC	W J Rhea	7-13-65
DATE		

SWITCH, POTTED ASSEMBLY
SWITCH, PUSH BUTTON
AGC DSKY

CODE IDENT NO.	SIZE	DRAWING NO.
80230	C	2003923

SCALE 2/1 SHEET 1 OF 1

REVISIONS 21877						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



NOTES
1. IDENTIFY WITH PART NO PER ND1002019
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3 CRIMP FIND NO 2 AS SHOWN

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	2004967	WIRE, SOCKET CONTACT	2
1	2004964	DISK, RECEPTACLE	1
011		LIST OF MATERIALS	

2003933	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ± 5°
DO NOT SCALE THIS DRAWING

MATERIAL

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN Kit Simpler 12 JULY 65
CHECKED [illegible] 12 July 65
APPROVED [illegible] 13 July 65
APPROVED [illegible] 14 July 65
APPROVED MIT [illegible] 14 July 65
APPROVED MSC [illegible] DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DISK ASSEMBLY
PUSH BUTTON SWITCH
AGC DSKY

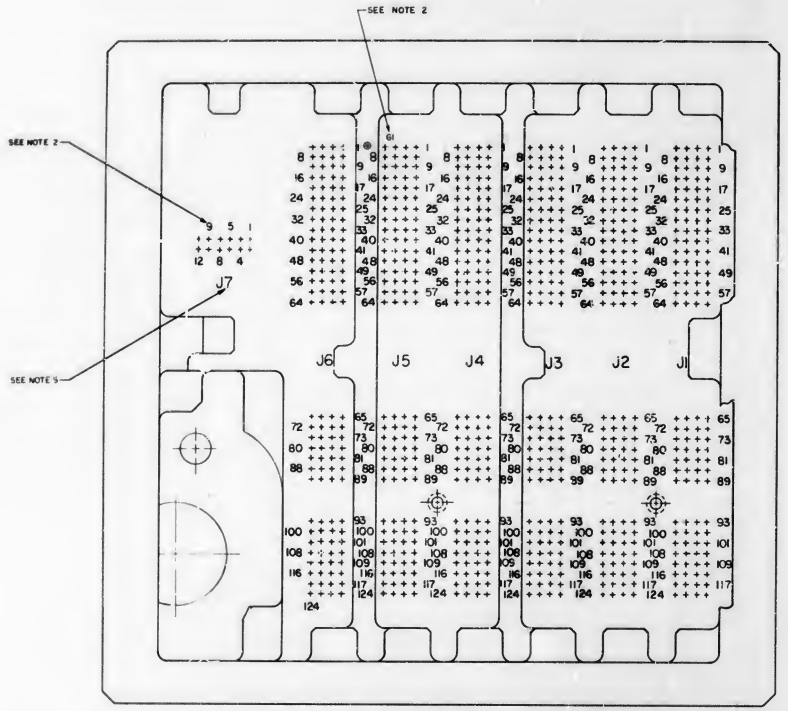
CODE IDENT NO.	SIZE	DRAWING NO.
80230	C	2003934

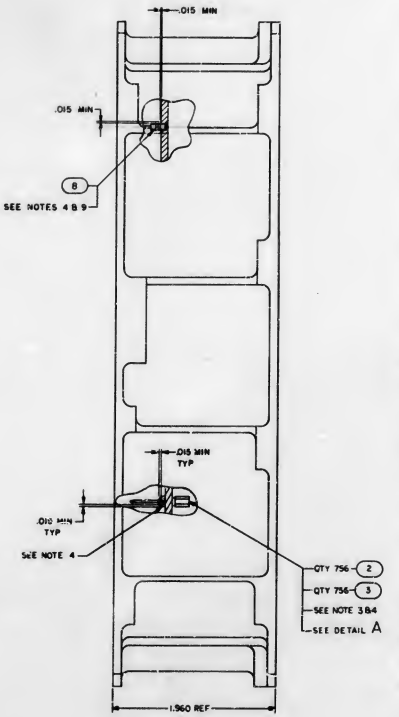
SCALE 4/1 SHEET 1 OF 1

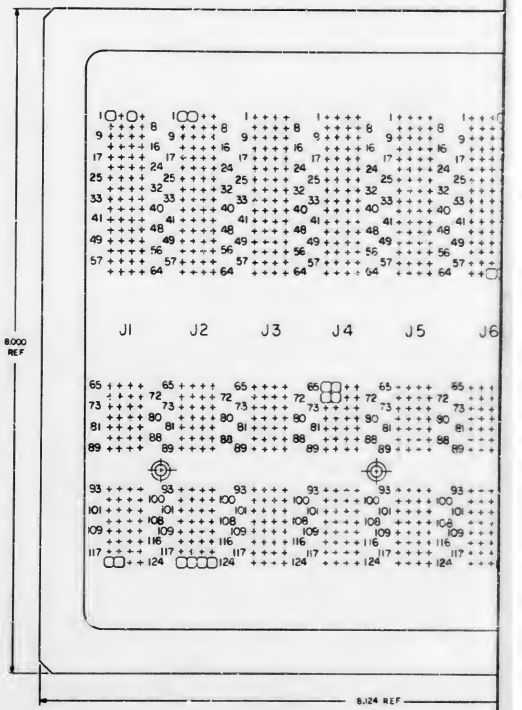
COND IDENT	REMARKS	FROM	FIND NO.	COLOR	SIZE AWG	LENGTH	TO	REMARKS
61		* J1-3	6	WHT	26	AR	J2-3	
62		* J3-3	"	"	"	"	J3-9	
63		* J5-10	"	"	"	"	J6-9	
64		* J2-10	"	"	"	"	J3-10	
65		* J3-64	6	WHT	26	AR	J5-9	

* DENOTES WIREWRAP MUST BE FIRST LEVEL

DETAIL A
SCALE 10/1
756 PLACES





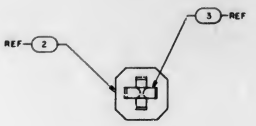


NOTES

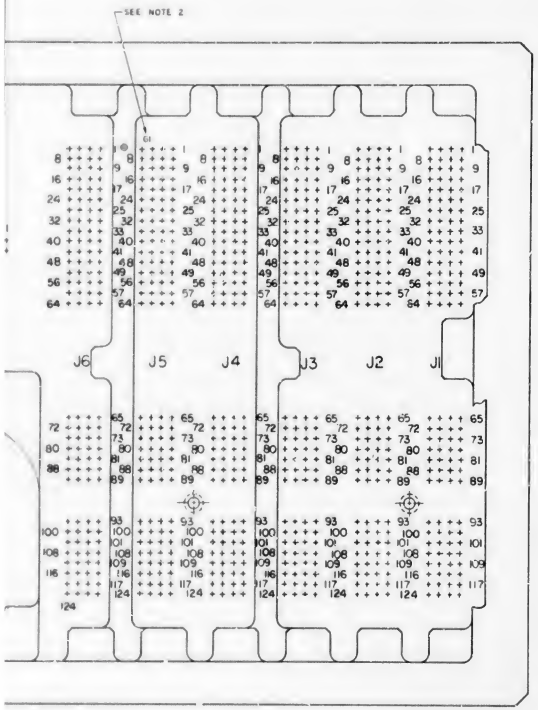
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK .070/.050 HIGH BLACK CHARACTERS PER ND1002019 AND ND1002122, TYPE II, CLASS 2, USING INK 1006271-11, CENTRALITE AS SHOWN
3. ASSEMBLE FIND NO. 2 AND FIND NO. 3 TO FIND NO. 1 PER ND1002136
4. SEAL FIND NO. 2, FIND NO. 5 AND FIND NO. 8 TO FIND NO. 1 PER ND1002004, TYPE VI
5. MARK .130/.110 HIGH BLACK CHARACTERS PER ND1002019 AND ND1002122, TYPE II, CLASS 2, USING INK 1006271-11, CENTRALIZE AS SHOWN
6. IDENTIFY WITH PART NO. PER ND1002019
7. AR DENOTES AS REQUIRED
8. WIREWRAP USING CHART AND WIREWRAP CARD DECK 2005906 AND PER ND1002031 EXCEPT FIND NO. 8 TO HAVE 5 MIN TO 6 MAX TURNS OF UNINSULATED WIRE, 1/2 TO 1 1/2 TURNS OF INSULATED WIRE, STRIP LENGTH OF 1187 TO 1000, STRIP FORCE OF 5 LB MIN.
9. ~~INSTALL FIND NO. 8 ON POSITIONS~~
10. MOUNTING TORQUE FOR FIND NO. 8 TO BE 15-20 INCH OUNCES

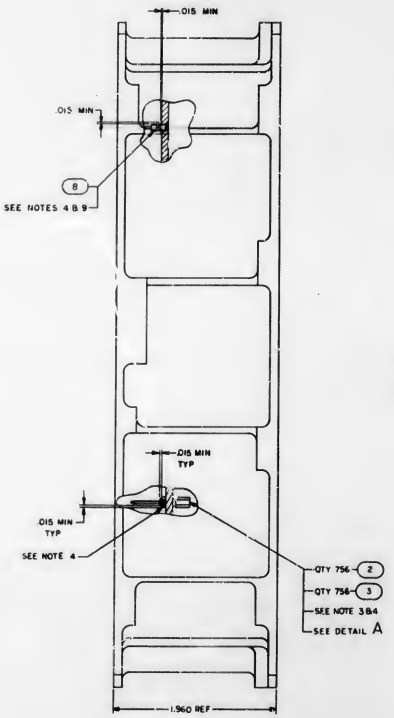
COND IDENT	REMARKS	FROM	FIND NO.	COLOR	SIZE A-YG	LENGTH	TO	REMARKS
61		* J1-3	6	WHT	26	AR	J2-3	
62		* J3-3	6	"	"	"	J3-9	
63		* J3-10	"	"	"	"	J6-9	
64		* J2-10	"	"	"	"	J3-10	
65		* J3-64	6	WHT	26	AR	J5-9	

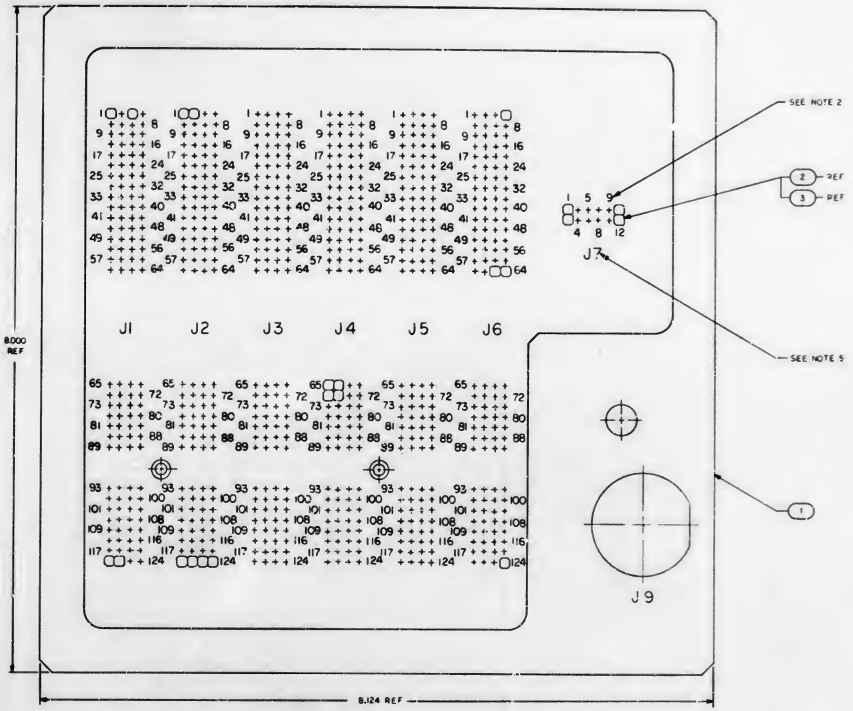
* DENOTES WIREWRAP MUST BE FIRST LEVEL



DETAIL A
SCALE 10/1
756 PLACES







	2005951	INTERCONNECTING DIAGRAM	REF
	2005906	WIREWRAP CARD DECK	REF
1	2004039	TERMINAL, THREADED	8
2	2004967	PIN, FOR LEDS	7
A.R.	1010807-22	WIRE, E.E.C.	6
336	1006731-2	CONTACT, WIRAPOST-FEMALE, MINIATURE	5
A.R.	1006732-1	WIRE, ELEC.	4
756	1006731-4	CONTACT, WIRAPOST-FEMALE, MINIATURE	3
756	1006774	INSULATOR, WIRAPOST-FEMALE, MINIATURE	2
1	2004974-011	PLATE, IDM	1
QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
011		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINISH

INSTRUMENTATION LAB
DRAWN
CHECKED
APPROVED
PROJ APPROVAL
QUAL APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIREWRAP IDM PLATE ASSY
MAIN HOUSING
AGC DSKY

2003954		
NEXT ASSY	USED ON	
APPLICATION		

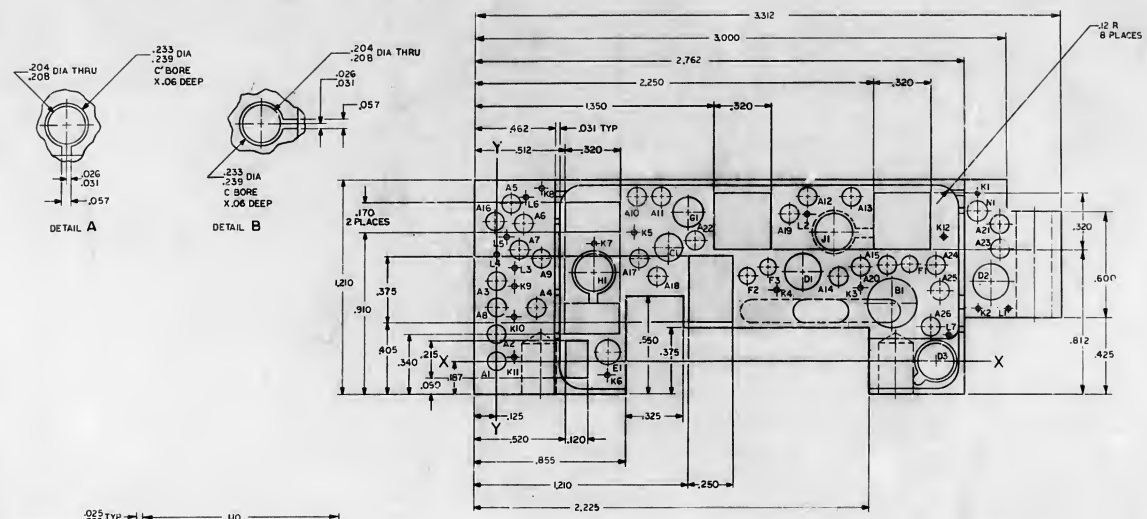
SIZE	CAGE IDENT NO	DRAWING NO
J	80230	2003967

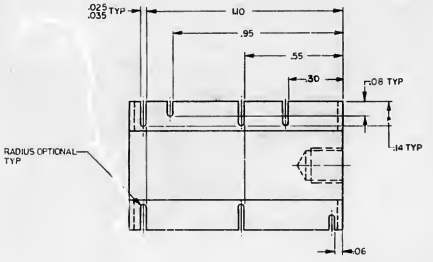
SCALE 2/1 WT SHEET 1 OF 1

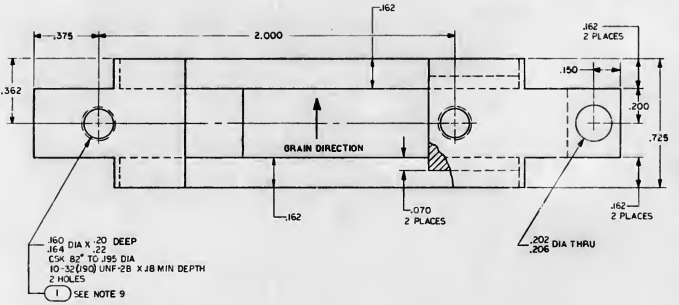
2003967 B

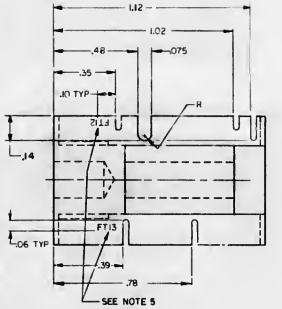
REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 19684	WM	JT	2-14-68	
B		REVISED PER TDRR 20864	WM	JT	7-24-68	
C		REVISED PEN TDRR 23956	WM	JT	12-11-68	
D		REVISED PER TDRR 26551	WM	JT	3-4-69	

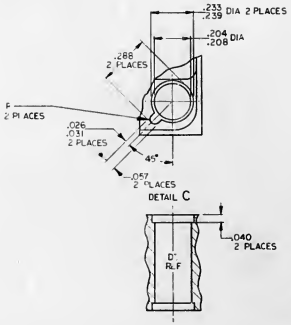
HOLE IDENT	X DIM.	Y DIM.	HOLE DIA	QTY
A1	.000	.000		
A2	.000	.150		
A3	.000	.450		
A4	.225	.300		
A5	.075	.887		
A6	.150	.775		
A7	.125	.625		
A8	.000	.300		
A9	.250	.575		
A10	.787	.925		
A11	.525	.925		
A12	1.750	.925	.100 .104	26
A13	2.000	.925		
A14	.925	.475		
A15	2.200	.537		
A16	-.012	.787		
A17	.800	.575		
A18	.900	.475		
A19	1.650	.825		
A20	2.050	.525		
A21	2.837	.775		
A22	1.112	.675		
A23	2.837	.537		
A24	2.475	.537		
A25	2.500	.400		
A26	2.450	.200		
B1	2.225	.325	.274 X .282 Y .29 DP	1
C1	.962	.637	.153 .157	1
D1	1.725	.500	.202 .206	2
D2	2.787	.450		
D3	2.475	.000	SEE DET C	1
E1	.625	.050	.135 .139	1
F1	2.325	.537	.088 .092	3
F2	1.412	.475		
F3	1.525	.525		
G1	1.075	.837	.168 .172	1
H1	.550	.500	SEE DET A	1
J1	1.900	.725	SEE DET B	1
K1	2.712	.950		
K2	2.712	.300		
K3	2.050	.412		
K4	1.575	.400		
K5	.775	.725	.023 .027	12
K6	.625	-.075		
K7	.550	.662		
K8	.250	.975		
K9	.100	.425		
K10	.100	.250		
K11	.100	.025		
K12	2.525	.700		
L1	2.887	.300		
L2	1.750	.825		
L3	.100	.525	.023 X .027 .15 DP	7
L4	.000	.600		
L5	.050	.700		
L6	.162	.925		
L7	2.550	.150		
M1	.250	.850		
M2	.250	.775		
M3	.250	.700	.023 X .027 .15 DP	6
M4	-.075	.875		
M5	-.075	.550		
M6	.100	.125		
N1	2.712	.850	.108 .112	1

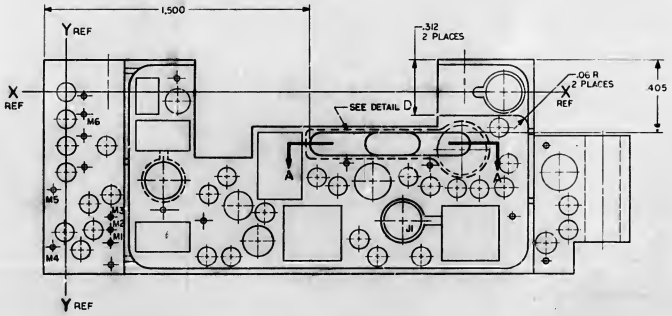


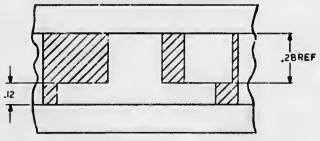


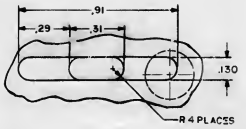












NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: PLASTIC SHEET PER MIL-P-18177 TYPE GEE
3.
4.
5. MARK .06404 HIGH WHITE CHARACTERS PER ND 1002019 AND ND 1002122 TYPE II CLASS 2 USING INK 1006271-1
6. REMOVE BURRS AND BREAK SHARP EDGES .005/.015
7. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII .010 MAX
8. IDENTIFY WITH PART NO. PER ND1002019
9. INSTALL FIND NO. 1 .005/.020 BELOW FIND NO. 2 PER ND1002121

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	1006702-2	INSERT, THREADED	1

LIST OF MATERIALS

2003035	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON FRACTIONS ± 1/64 DECIMALS .XX ± .02 .XXX ± .005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING

MATERIAL: SEE NOTE 2

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

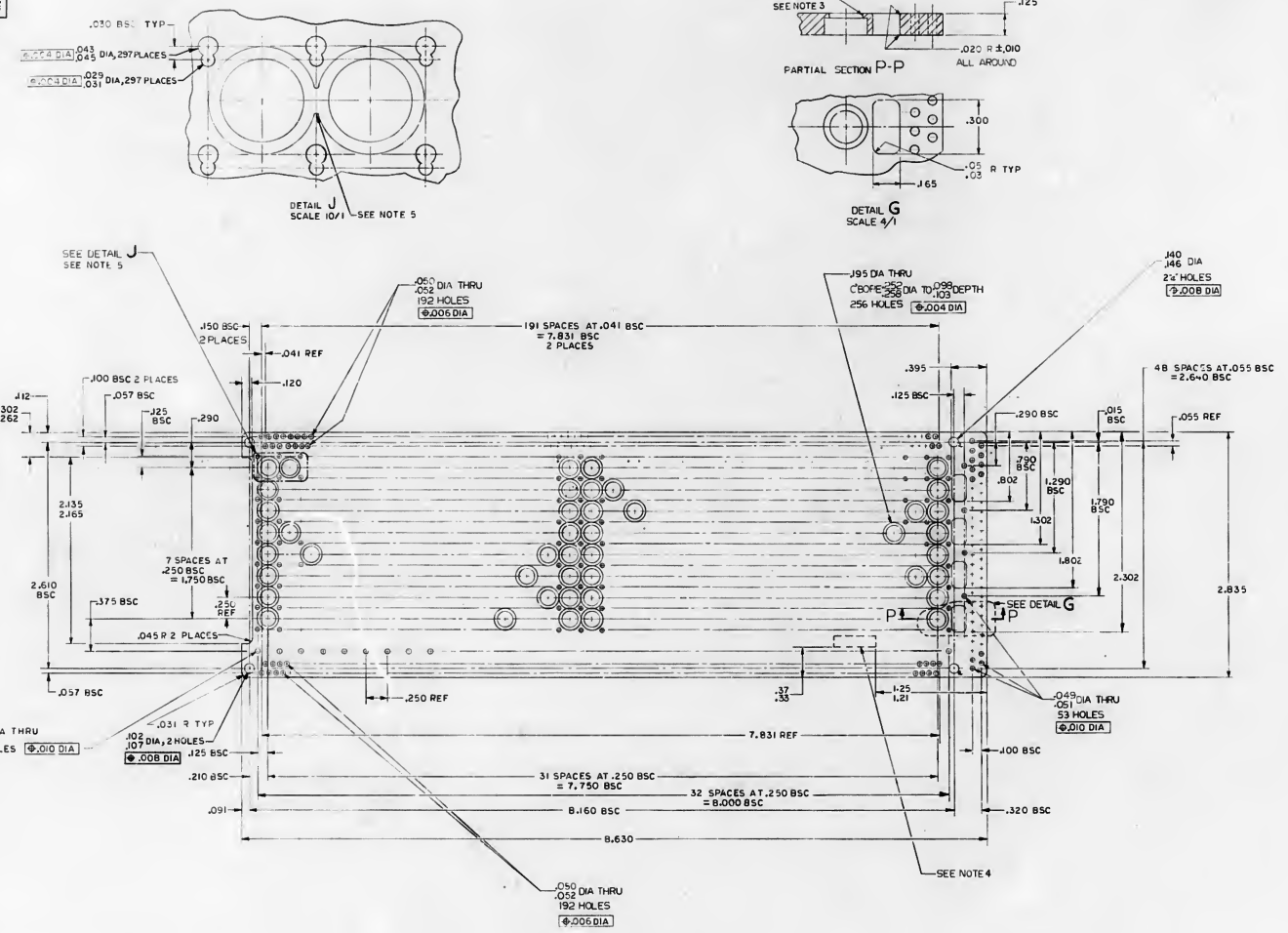
DRAWN: W. Mayhew 1-22
CHECKED: R. Crosby 1-22
APPROVED: Eldon Cissell 2-14-68

APPROVED MIT: [illegible] DATE: 2-14-68
APPROVED MSC: [illegible] DATE: 2-14-68

COMPONENT HOLDER
AGC OSCILLATOR MODULE NO. 57

CODE IDENT NO. 60230 | SIZE E | DRAWING NO. 2004060

SCALE 4/1 | SHEET 1 OF 1



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: PLASTIC SHEET PER MIL-P-18177 TYPE GEE
3. REMOVE BURRS AND SHARP EDGES .005/.015
4. IDENTIFY WITH PART NO. PER ND 1002019
5. BREAK THRU PERMISSIBLE BETWEEN .252/.258 DIA C'BORE HOLES

REVISIONS 2004.3

SYM	ZIP NR	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 208[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
B		REVISED PER TDRR 22267	[illegible]	[illegible]	[illegible]	[illegible]

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μF
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± .005 ±
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

2003049
NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

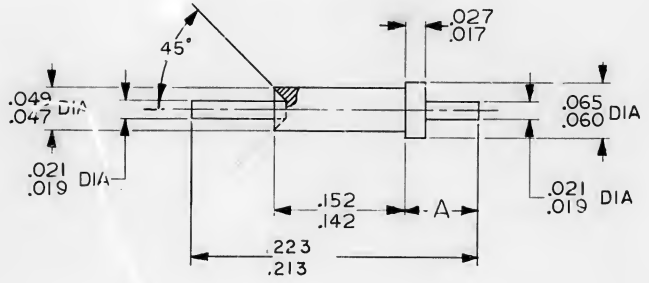
DRAWN [illegible]
CHECKED [illegible]
APPROVED [illegible]
APPROVED [illegible]
APPROVED MIT [illegible]
APPROVED MSC [illegible]
DATE

CORE HOLDER
FIXED MEMORY MODULE

CODE IDENT NO 80230
SIZE E
DRAWING NO. 2004067
SCALE 2/1
SHEET 1 OF 1

2004067

REVISIONS 20043			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 21340	27 AUG 65	WLK



PART NO.	DIM A ±.005
2004069-001	.060
2004069-002	.093

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: NICKEL PER MIL-N-46026 TEMP AS DRAWN
3. FINISH: GOLD PLATE PER MIL-G-45204, TYPE II CLASS I
4. REMOVE BURRS AND SHARP EDGES .005 MAX
5. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII TO BE .005 MAX
6. ALL SURFACES 63
7. IDENTIFY WITH DRAWING NO. AND REVISION PER ND 1002019

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

2003049	
2003040	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± 5°
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
HEAT TREATMENT
FINAL FINISH
SEE NOTE 3

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN Richard Jones DATE 10 MAR 65
CHECKED R.R. Ingalese 29 MAY 65
APPROVAL J.D. Goodale 27 May 65
APPROVAL Eldon C. Hall 2 June 65
NASA APPROVAL [signature] 6/15/65
MIT APPROVAL [signature]

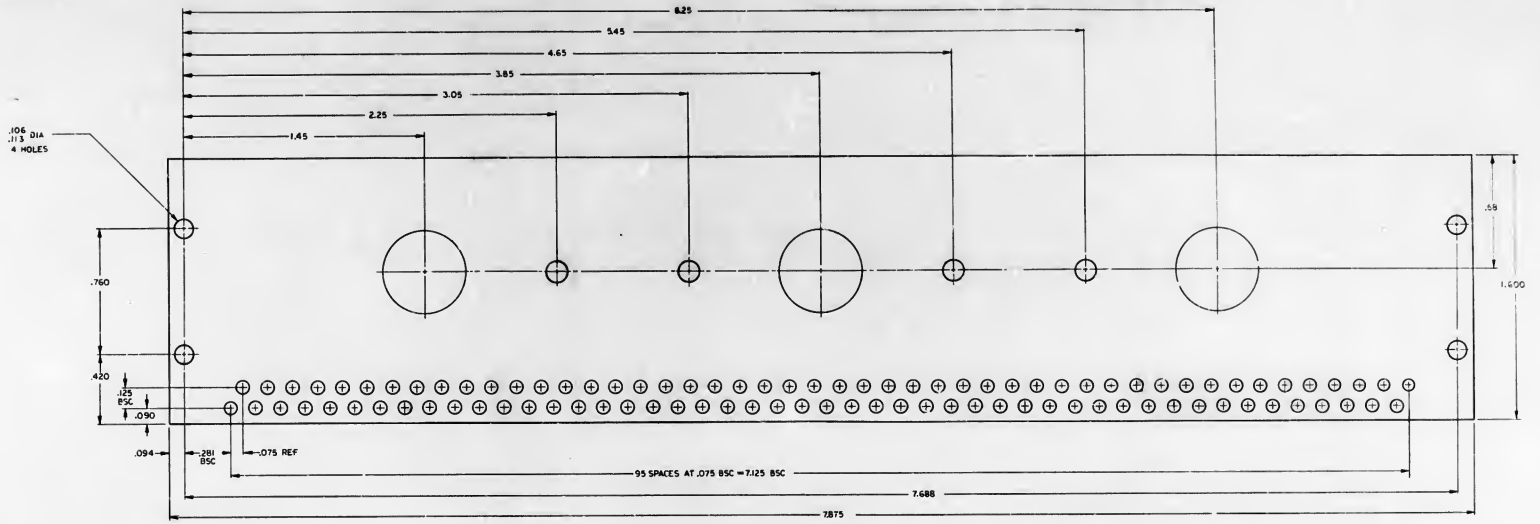
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

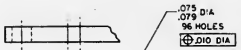
TERMINAL, TURRET
FIXED MEMORY MODULE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
80230	C	2004069

SCALE 10/1 WT SHEET 1 OF 1

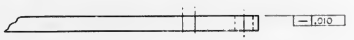
2004069

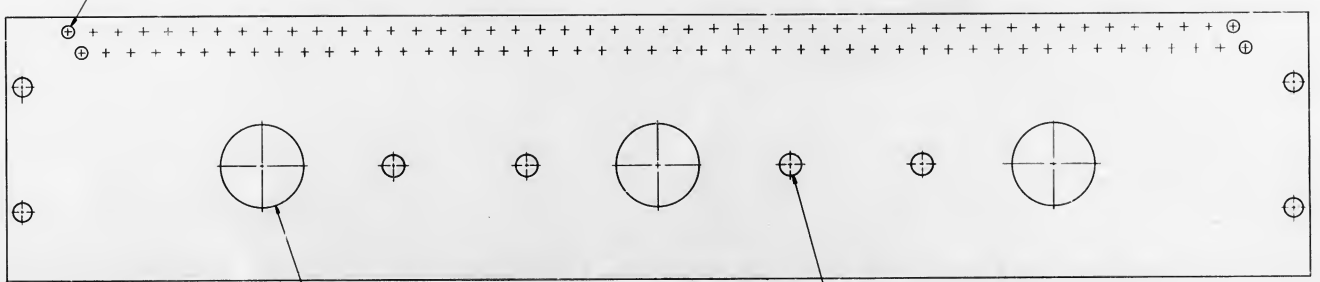




.075 DIA
.079 DIA
96 HOLES
⊕ .010 DIA

THIS VIEW SHOWN WITHOUT FIND NO. 2





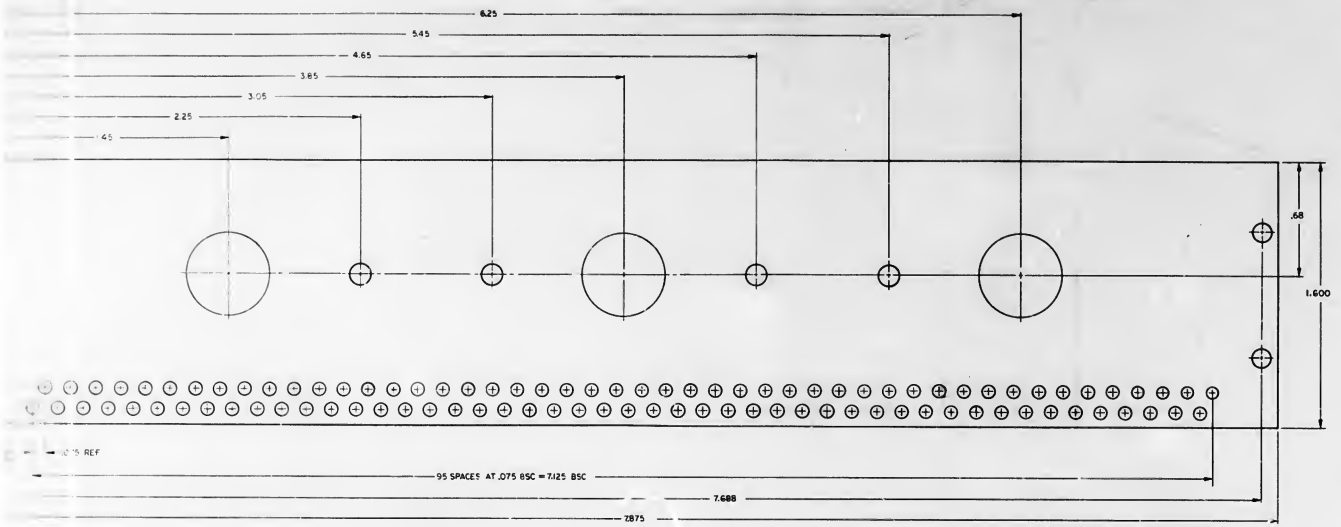
.50 DIA
3 HOLES

.42 DIA
4 HOLES

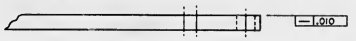
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: PLASTIC SHEET .093 THICK LAMINATED PER MIL-P-18177 TYPE GEE
3. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/.015
4. IDENTIFY WITH PART NO. PER ND1002019

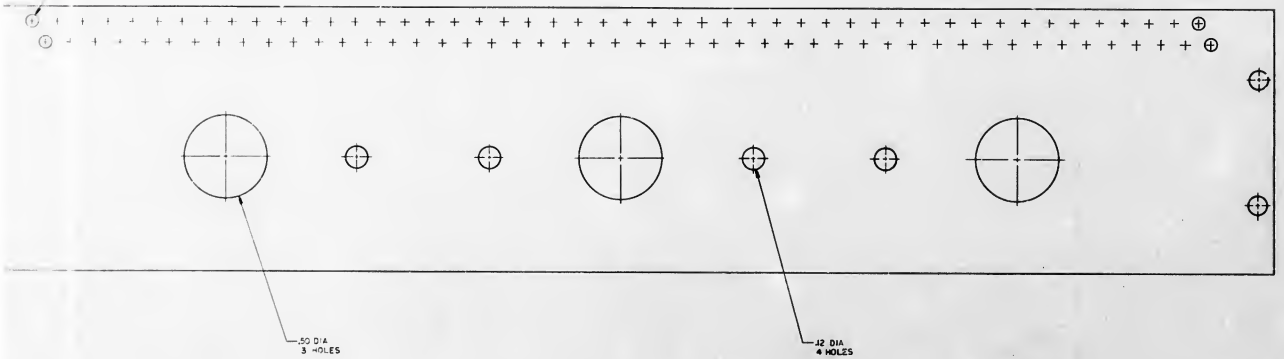
2004170 | B

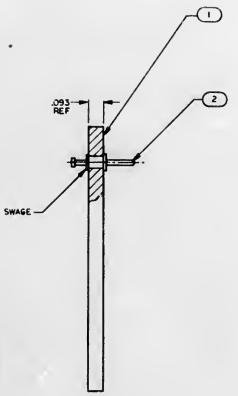
REVISIONS					
LTR	DESCRIPTION	ECR	CHK	DATE	APPROVED
A	REVISED PER TDRR 24767				
B	REVISED PER TDRR 30416				



THIS VIEW SHOWN WITHOUT FIND NO. 2







QTY PER	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
96	2004171	TERMINAL	2
1	2004170-001	PLATE, FEEDTHRU	1

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. CAPACITOR VALUES ARE IN μf. RESISTOR VALUES ARE IN OHMS. TOLERANCES ON FRACTIONS ±1/64, DECIMALS .XX ±.005, .XXX ±.002. DO NOT SCALE THIS DRAWING.

MATERIAL: SEE NOTE 2

NEXT ASSY: 2003109 — USED ON: APPLICATION

M.I.T. INSTRUMENTATION LAB, CAMBRIDGE, MASS.

DRAWN — DATE
CHECKED
APPROVED
APPROVED M.I.T.
APPROVED NASA

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

FEEDTHRU PLATE
INSEPARABLE ASSEMBLY
ERASABLE MEMORY

CODE IDENT NO 80230 | SIZE J | DRAWING NO 2004170

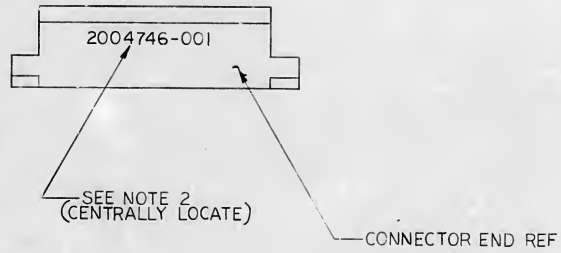
DATE | SCALE 4/1 | SHEET 1 OF 1

2004170 B

2004746

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL
	TDMC 3737		

PART NO.	DIGITAL INDICATOR NO.
2004746 – 001	1006315 – 001



GENERAL REQUIREMENTS:

UPON COMPLETION OF ALL THE REQUIREMENTS AS SPECIFIED IN PARA. 4.2.1. OF PS 2016043 ONLY THE DIGITAL INDICATORS WHICH PASS THE REQUIREMENTS OF PARA 4.2.1 OF PS 2016043 SHALL BE MARKED AS SPECIFIED IN THIS DOCUMENT

NOTES

1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PERSCRIBED BY MIL-D-70327
2. IDENTIFY WITH PART NO. PER ND 1002019 AND SERIALIZE PER ND1002023

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

2003988	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN Bill Clinton DATE 1-23-69
CHECKED E Urban 1-27-69
APPROVAL Eldon C Hall 24 Jan 69
APPROVAL W Starmer 28 Jan 69
NASA APPROVAL
MIT APPROVAL M C Murphy 29 Jan 69

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

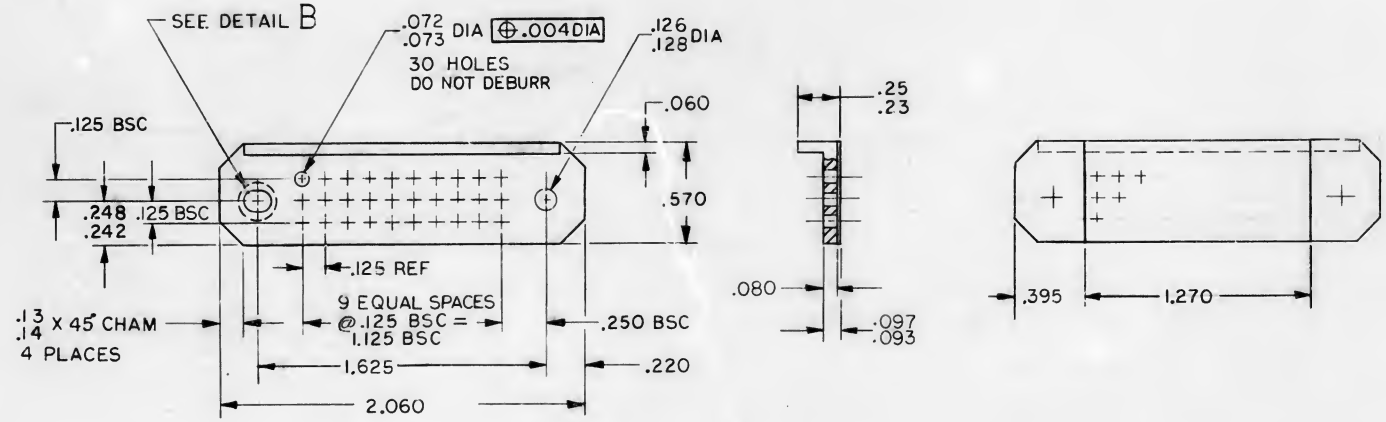
INDICATOR, DIGITAL
(THERMAL-VAC)

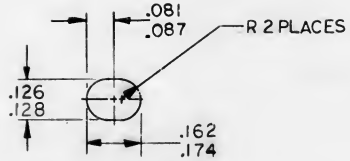
CODE IDENT NO.	SIZE	NASA DRAWING NO.
80230	C	2004746

SCALE NONE WT SHEET 1 OF 1

2004746

REVISIONS 2005					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 21398	KWS		8/17/65	





DETAIL B
SCALE 4/1

NOTES

1. MATL: 6061-T6 AL PER QQ-A-250/11, TEMPER T6
2. REMOVE BURRS AND SHARP EDGES .01/.02 EXCEPT AS NOTED
3. CHROMATE PER MIL-C-5541, TYPE II, GRADE C, CLASS 3
4. ALL SURFACES 125
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
6. IDENTIFY WITH DRAWING NO. AND REVISION PER ND1002019

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

2003914	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMA'S ±.005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 1

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN K. Cramer 6 JUN 65
CHECKED C. DeFrancia 4 JUN 65
APPROVED [illegible] 4 JUN 65
APPROVED Ella C. Hall 4 Jun 65

APPROVED MIT MG Hinds 7-13-65
APPROVED MSC WJ Klein 7/13/65
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

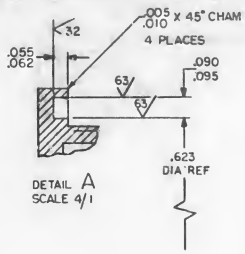
PLATE, CONNECTOR INDICATOR ALARM AGC DSKY

CODE IDENT NO	SIZE	DRAWING NO.
80230	C	2004921

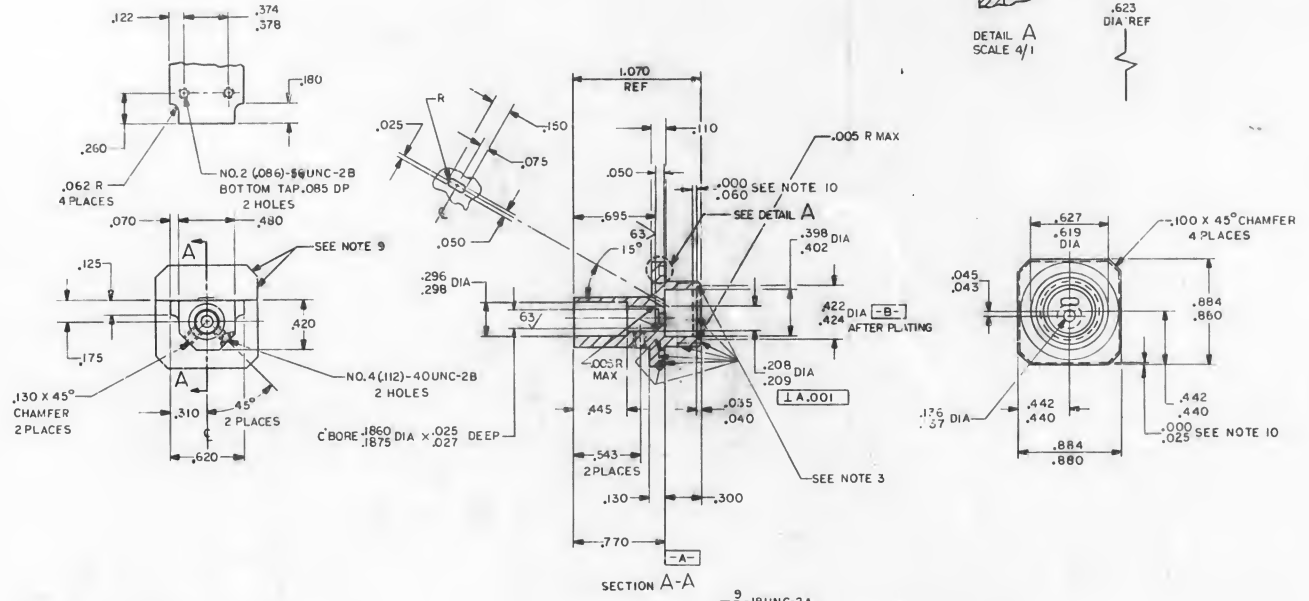
SCALE 2/1 SHEET 1 OF 1

D 2004949

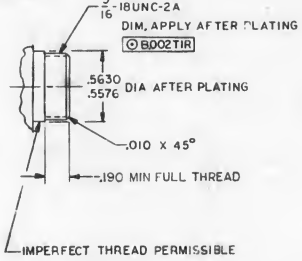
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 21818				
B		REVISED PER TDRR 25148				
C		REVISED PER TDRR 26856				
D		REVISED PER TDRR 31830				



DETAIL A
SCALE 4/1



SECTION A-A



NOTES

1. MATL: 6061-T6 AL PER QQ-A-250/11, TEMP T6
2. ANODIZE EXCEPT IN AREA INDICATED PER MIL-A-8625, TYPE II, DYED BLACK (THICKNESS OF ANODIC COATING .0003-.0004)
3. TIN PLATE AREA SHOWN PER MIL-T-10727, TYPE I, SOLDERABLE, PRESERVATIVE COATING REQUIRED. (THICKNESS OF TIN PLATING .0001-.0003)
4. ALL INSIDE RADII TO BE .010 R MAX
5. REMOVE BURRS AND SHARP EDGES .005 MAX UNLESS OTHERWISE SPECIFIED
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
7. IDENTIFY WITH PART NO. PER ND1002019
8. ALL SURFACES 125 UNLESS OTHERWISE SPECIFIED
9. SURFACES ALL AROUND TO BE FREE OF TIN PLATING
10. ALLOWABLE FLASH AT INTERFACE OF BLACK ANODIZE & TIN PLATE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

2003933	
2003924	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± .005 DECIMALS ± .005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 1

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	K. Hampton	7/25/67
CHECKED	J. Nunn	7/25/67
APPROVED	G. Manning	7/26/67
APPROVED	D.R. Chatt	8/1/67
APPROVED MIT	W. Mackey	7/25/67
APPROVED MSC	W.J. Kobe	7/25/67

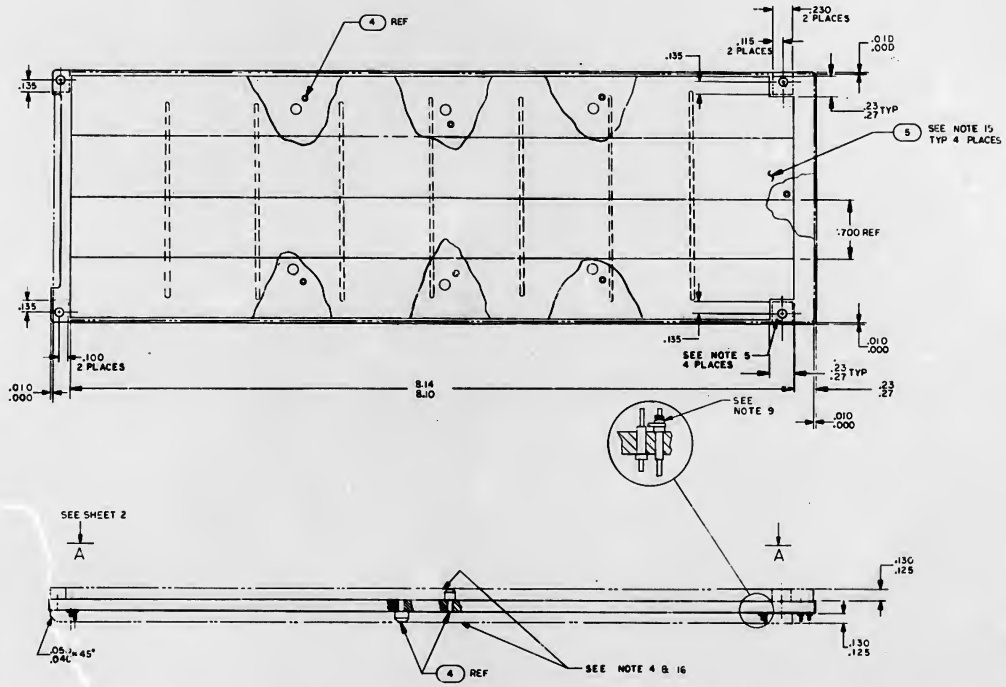
HOUSING, SWITCH MOUNTING
SWITCH, PUSH BUTTON
AGC DSKY

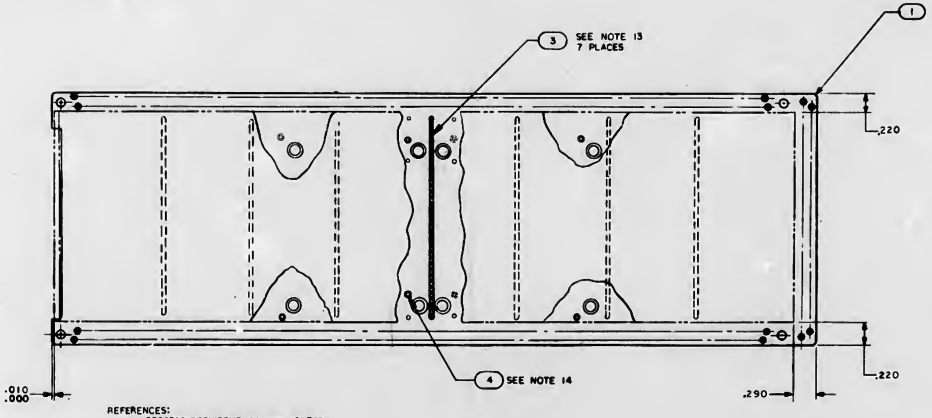
CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 2004949

SCALE 2/1 | SHEET 1 OF 1

2004949 D

PART NO.	MODULE DECK NO.
2010803 -011	0321
-021	0322
-031	0323
-041	0324
-051	0325
-061	0326
-071	0327
-081	0328
-091	0329
-101	0330
-111	0331
-121	0332
-131	0333
-141	0334
2010803 -151	0335
2010803 -161	0336
2010803 -171	0337
2010803 -181	0338
-191	0339
-201	0340
-211	0341
-221	0342
-231	0343
2010803 -241	0344
2010803 -251	0345
-261	0346
-271	0347
-281	0348
-291	0349
2010803 -311	0350
2010803 -321	0351
-331	0352
-341	0353
-351	0354
-361	0355
2010803 -371	0356
2010803 -381	0357
-391	0358
-411	0359
-421	0360
-431	0361
2010803 -441	0362
2010803 -451	0363
-461	0364
-471	0365
-481	0366
-491	0367
2010803 -511	0368
2010803 -521	0369
2010803 -531	0370
2010803 -541	0371
-551	0372
-561	
-571	
-581	
2010803 -591	





NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER ND1002071, USING SOLDER COMP SN60 WIRE FORM SOLID PER ND1002075
3. SENSEWIRE USING FIND NO. 2 PER MODULE DECK NO. AS SHOWN IN CHART
4. ENCAPSULATE PER ND1002002, REMOVE FLASHING
5. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND
6. IDENTIFY WITH PART NO. PER ND1002019
7. AR DENOTES AS REQUIRED
8. SEE SHEET 2 FOR TERMINAL IDENTIFICATION
9. DO NOT TIN LEADS OF FIND NO.2. SOLDER WRAPS TO BE 2 TO 4 TURNS OF UNINSULATED WIRE AND 3/4 TO 1 1/2 TURNS OF INSULATED WIRE AROUND TERMINAL AS SHOWN. PROVIDE SERVICE LOOP
10. AS LITTLE SLACK AS POSSIBLE SHALL BE MAINTAINED WITHOUT THE SENSE WIRES CROSSING ANY CORE OPENINGS
11. THE MAXIMUM NUMBER OF SENSE WIRES PER SIDE INCLUDING INCORRECT WIRES WHICH HAVE BEEN REPLACED SHALL BE 210
12. INSULATION ON THE SENSE WIRE RUNS SHALL BE INTACT EXCEPT AT SOLDER JOINTS. THE CUT ENDS OF INCORRECT WIRES SHALL BE COATED WITH CLEAR INSULATING COMPOUND PER SCD 1006303
13. WRAP & TIE AROUND WIRED ASSY APPROXIMATELY AS SHOWN WITH ONE WRAP OF FIND NO. 3
14. STAKE FIND NO. 4 TO FIND NO.1 PER ND1002004 TYPE X
15. BOND FIND NO.5 TO SURFACE OF ENCAPSULATION CENTRALIZE AS SHOWN.
16. VISIBLE COMPONENTS, FIND NO. 2,3 & 4 SHALL NOT EXCEED ENCAPSULATED SURFACE
17. DUMMY SENSE WIRE LINES, IF REQUIRED, RUNNING ADJACENT AND ON THE SAME SIDE OF FIND NO.1 SHALL BE ROUTED IN OPPOSITE DIRECTIONS

REFERENCES:
1. PROCESS REQUIREMENTS FOR CONTROL AND INSPECTION OF ROPE MEMORY ASSEMBLIES ND 1002085
2. FIXED MEMORY FIXTURE DWG NO AP 22500

REVISIONS					
LTR	ZONE	DESCRIPTION	DR	APP	DATE
A		REVISED PER TDRR 34915	JM		2/27/70
B		REVISED PER TDRR 35116	JM		3/4/70
C		REVISED PER TDRR 35304	JM		4/7/70
D		REVISED PER TDRR 37967			4/16/70
E		REVISED PER TDRR 38022			5/4/70
F		REVISED PER TDRR 38103			5/11/70
G		REVISED PER TDRR 38181			5/14/70
H		REVISED PER TDRR 38128			5/26/70
J		REVISED PER TDRR 38290			6/2/70
K		REVISED PER TDRR 38480			6/24/70
L		REVISED PER TDRR 38963			7/20/70
M		REVISED PER TDRR 38124			8/3/70

QTY (REQD)	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
AR	1006806-8	INSULATION TAPE, ELECTRICAL	5
13	2004896	SPACER	4
AR	10-2507-001	TAPE, LACING & TYING	3
AR	1006275-2	WIRE, ELECTRICAL	2
1	2003050-021	CORE HOLDER ASSY	1

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. CAPACITOR VALUES ARE IN μf. RESISTOR VALUES ARE IN OHMS. TOLERANCES ON FRACTIONS ±1/64, DECIMALS .X ±.1, .XX ±.01, ANGLES ±5°. DO NOT SCALE THIS DRAWING.

MATERIAL —

NEXT ASSY 2010802 — USED ON APPLICATION

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

DRAWN R. Chisholm 4-10-70
CHECKED J. Cohen 4-10-70
APPROVED John Cowell 4-10-70
APPROVED MIT
APPROVED MSC

SENSE WIRING ASSY SIDE B FIXED MEMORY MODULE

CODE IDENT NO. 80230 — SIZE E — DRAWING NO. 2010803 — SCALE 2/1 — SHEET 1 OF 2

2010803M1

VIEW A-A

SYM	ZONE	DESCRIPTION	BY	CHK	DATE	APPROVED
A		REVISED PER TORR 2758				
B		REVISED PER TORR				
C		REVISED PER TORR				
D		REVISED PER TORR				
E		REVISED PER TORR				
F		REVISED PER TORR 3112				
G		REVISED PER TORR 3151				
H		REVISED PER TORR				
J		REVISED PER TORR 3-24				
K		REVISED PER TORR 3380				
L		REVISED PER TORR 3402				
M		REVISED PER TORR 3404				

REVISIONS TORR 2758

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
.X ± .X ± °
DO NOT SCALE THIS DRAWING

MATERIAL

NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB CAMBRIDGE MASS

DRAWN R.C. Chandler
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

SENSE WIRING ASSY SIDE B FIXED MEMORY MODULE

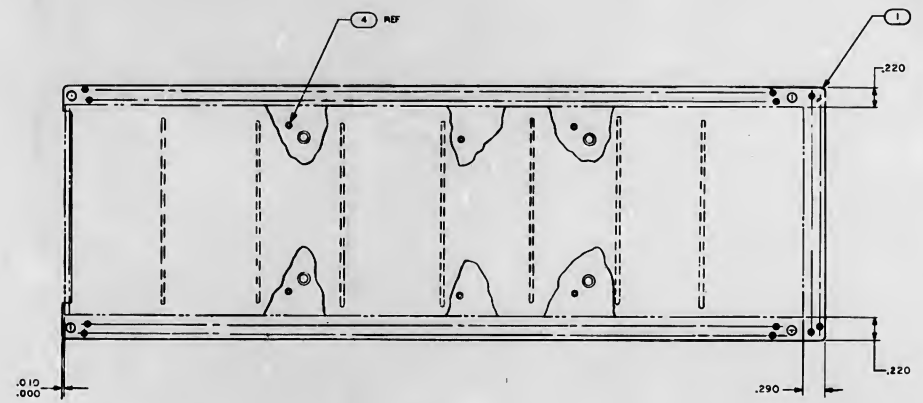
CODE IDENT NO	SIZE	DRAWING NO.
80230	E	2010803

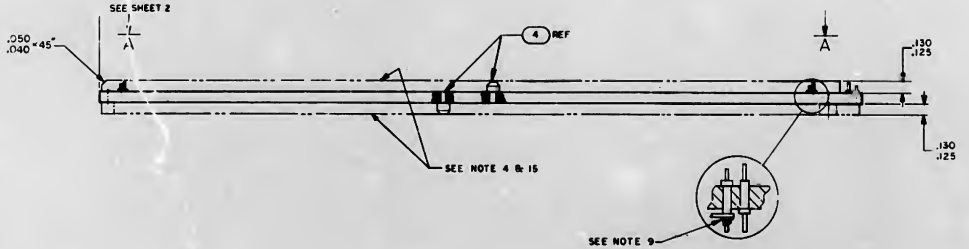
SCALE 4/1 | SHEET 2 OF 2

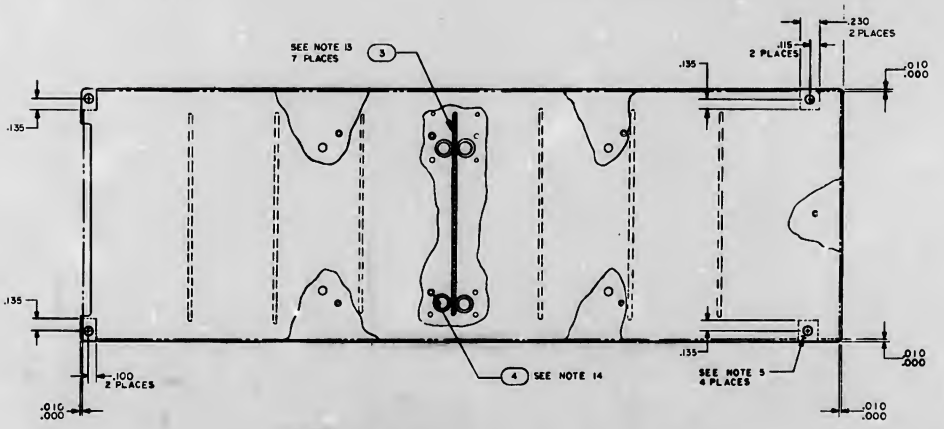
PART NO.	MODULE DECK NO.
2010804-021	0318
2010804-031	0321
-041	0322
-051	0323
-061	0324
-071	0325
2010804-081	0326
-091	0327
-101	0328
-111	0329
-121	0330
-131	0331
2010804-141	0332
-151	0333
2010804-161	0334
-171	0335
-181	0336
-191	0339
-201	0340
-211	0341
2010804-231	0342
2010804-241	0343
-251	0344
-261	0345
-271	0346
-281	0347
2010804-291	0348
-321	0349
-331	0351
-341	0352
-351	0353
2010804-361	0354
2010804-371	0355
-381	0356
-391	0357
-411	0358
-421	0359
2010804-431	0360
2010804-441	0361
-451	0362
-461	0363
-471	0364
-481	0365
2010804-491	0366
2010804-511	0238
2010804-521	0229
2010804-531	0367
-541	0368
-551	0369
-561	0370
-571	0371
2010804-581	0272

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 37878				
B		REVISED PER TDRR 37915				
C		REVISED PER TDRR 37916				
D		REVISED PER TDRR 38022				
E		REVISED PER TDRR 38032				
F		REVISED PER TDRR 38151				
G		REVISED PER TDRR 38173				
H		REVISED PER TDRR 38250				
J		REVISED PER TDRR 38380				
K		REVISED PER TDRR 38403				
L		REVISED PER TDRR 38494				

REVISIONS TDRR 37856







NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER ND1002071, USING SOLDER COMP SN6D WIRE FORM SOLID PER ND1002075
3. SENSEWIRE USING FIND NO.2 PER MODULE DECK NO. AS SHOWN IN CHART
4. ENCAPSULATE PER ND1002002 REMOVE FLASHING
5. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND
6. IDENTIFY WITH PART NO. PER ND 1002019
7. AR DENOTES AS REQUIRED
8. SEE SHEET 2 FOR TERMINAL IDENTIFICATION
9. DO NOT TIN LEADS OF FIND NO.2. SOLDER WRAPS TO BE 2 TO 4 TURNS OF UNINSULATED WIRE AND 3/4 TO 1 1/2 TURNS OF INSULATED WIRE AROUND TERMINAL AS SHOWN. PROVIDE SERVICE LOOP
10. AS LITTLE SLACK AS POSSIBLE SHALL BE MAINTAINED WITHOUT THE SENSE WIRES CROSSING ANY CORE OPENING
11. THE MAXIMUM NUMBER OF SENSE WIRES PER SIDE INCLUDING INCORRECT WIRES WHICH HAVE BEEN REPLACED SHALL BE 210
12. INSULATION ON THE SENSE WIRE RUNS SHALL BE INTACT EXCEPT AT SOLDER JOINTS. THE CUT ENDS OF INCORRECT WIRES SHALL BE COATED WITH CLEAR INSULATING COMPOUND PER SCD1006303
13. WRAP & TIE AROUND WIRED ASSY APPROXIMATELY AS SHOWN WITH ONE WRAP OF FIND NO. 3
14. STAKE FIND NO.4 TO FIND NO.1 PER ND1002004 TYPE IX
15. VISIBLE COMPONENTS, FIND NO. 2, 3, & 4, SHALL NOT EXCEED ENCAPSULATED SURFACE
16. DUMMY SENSE WIRE LINES, IF REQUIRED, RUNNING ADJACENT AND ON THE SAME SIDE OF FIND NO.1 SHALL BE ROUTED IN OPPOSITE DIRECTIONS

REFERENCES
1. PROCESS REQUIREMENTS FOR CONTROL AND INSPECTION OF ROPE MEMORY ASSEMBLIES ND1002205
2. FIXED MEMORY FIXTURE DWG AP 22500

13	2004896	SPACER	4
AR	1012507-001	TAPE, LACING & TYING	3
AR	1006275-2	WIRE ELECTRICAL	2
1	2003049-021	CORE HOLDER ASSY	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. CAPACITOR VALUES ARE IN μf. RESISTOR VALUES ARE IN OHMS. TOLERANCES ON FRACTIONS ±1/64, DECIMALS ±.010, ANGLES ±5°. DO NOT SCALE THIS DRAWING

MATERIAL

2003972
2010803

NEXT ASSY | USED ON

APPLICATION

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

DRAWN E. Smith 4/4/67
CHECKED 4/4/67
APPROVED 4/4/67
APPROVED MIT 4/4/67
APPROVED MSC

SENSE WIRING ASSY
SIDE A
FIXED MEMORY MODULE

CODE IDENT NO. 80230 | SIZE E | DRAWING NO. 2010804

SCALE 2/1 | SHEET 1 OF 2

2010804

VIEW A-A

LTR	DESCRIPTION	DATE	APPD
A	REVISED PER TDRR 3765 DRAWN CHK	11/29	
B	REVISED PER TDRR 3796 DRAWN CHK	12/4	
C	REVISED PER TDRR 3796 DRAWN CHK	12/20	
D	REVISED PER TDRR 3796 DRAWN CHK	1/14	
E	REVISED PER TDRR 3812 DRAWN CHK	1/	
F	REVISED PER TDRR 3815 DRAWN CHK	1/30	
G	REVISED PER TDRR 3796 DRAWN CHK	2/10	
H	REVISED PER TDRR 3796 DRAWN CHK	2/20	
J	REVISED PER TDRR 3796 DRAWN CHK	2/21	
K	REVISED PER TDRR 3796 DRAWN CHK	3/14	
L	REVISED PER TDRR 3796 DRAWN CHK	4/4	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.
MANNED SPACECRAFT CENTER HOUSTON, TEXAS

DRAWN
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED NSC
DATE

SENSE WIRING ASSY
SIDE A
FIXED MEMORY MODULE

CODE IDENT NO. 80230 | SIZE E | DRAWING NO. 2010804
SCALE 4/1 | SHEET 2 OF 3

2014023 –

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25136	9/3/65	G. Harans
–	CLASS A RELEASED PER TORR 24982		

NOTES

1. THIS KIT IS USED FOR INSTALLING BLOCK II APOLLO DISPLAY AND KEYBOARD UNITS TO GSE UNIVERSAL HANDLING FIXTURE 2014013-011 PER INSTALLATION DWG NO. 2014027
2. IDENTIFY PER ND1002019

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
-011	LIST OF MATERIALS		
X	2014027	INSTALLATION DWG AGC DSKY	REF
8	MS15795-808	WASHER, FLAT	2
8	MS51958-64	SCREW, PAN HD	1

2014013	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ± DECIMALS .xxx ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN Joe Roper DATE 29 APR 65
CHECKED W. Lyons 30 JUL 65
APPROVAL G E Dube 8 AUG 65
APPROVAL J. Wiel 9 AUG 65
APPROVAL E. Sears 1 Sept 65
NASA APPROVAL A. C. METZGER
MIT APPROVAL W Langley 9 Dec 65
MIT APPROVAL G Harans 12/6/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MOUNTING KIT
AGC DSKY (BLK II SERIES)

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	2014023
SCALE NONE	WT	SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014023 –

2014023 –

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25136	9/3/65	G. Marano
–	CLASS A RELEASED PER TDRR 24982		

NOTES

1. THIS KIT IS USED FOR INSTALLING BLOCK II APOLLO DISPLAY AND KEYBOARD UNITS TO GSE UNIVERSAL HANDLING FIXTURE 2014013-011 PER INSTALLATION DWG NO. 2014027
2. IDENTIFY PER NO1002019

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	2014027	INSTALLATION DWG AGC DSKY	REF
8	MS15795-803	WASHER, FLAT	2
8	MS51958-64	SCREW, PAN HD	1
-011	LIST OF MATERIALS		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ± DECIMALS .xxx ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

2014013

NEXT ASSY | USED ON

APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

RAYTHEON CO.
LEXINGTON, MASS.

CONTRACT NO. NAS 9-497

DRAWN Joe Ryan DATE 29 JUL 65

CHECKED W. Lyons 30 JUL 65

APPROVAL G.S. Dunbar 3 AUG 65

APPROVAL J. White 3 AUG 65

APPROVAL E.C. Evans 1 Sept 65

NASA APPROVAL A. C. METZGER

MIT APPROVAL W.I. Gaylor 7 Dec 65

MIT APPROVAL G. Marano 12/6/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MOUNTING KIT
AGC DSKY (BLK II SERIES)

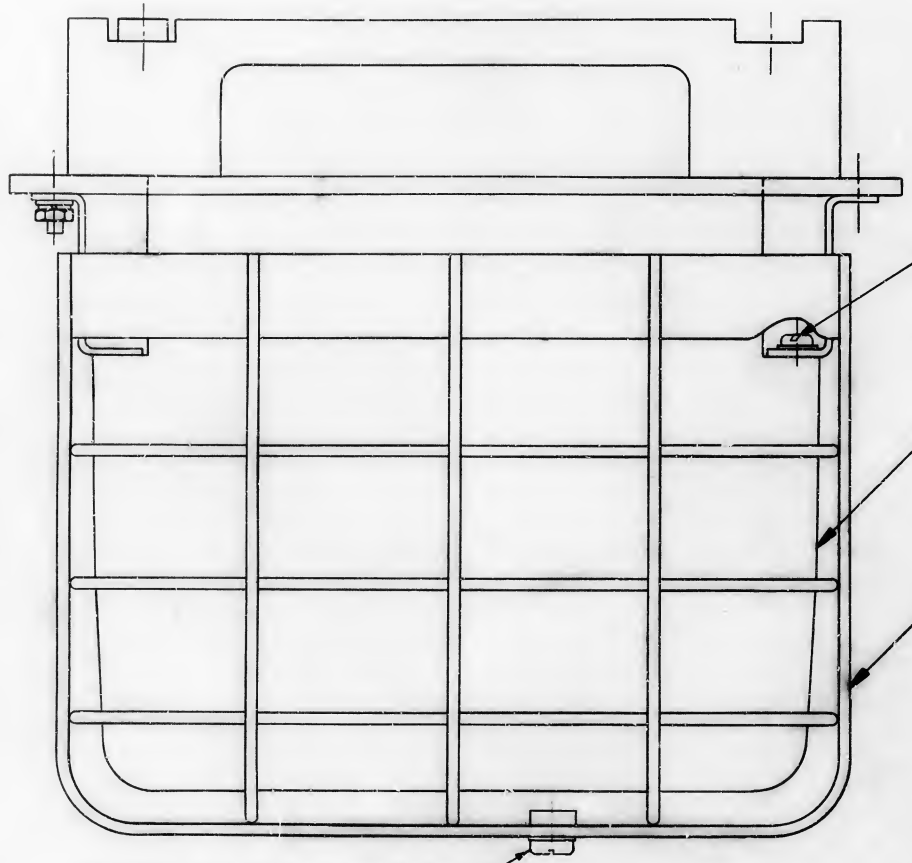
CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	2014023

SCALE NONE | WT | SHEET 1 OF 1

2014023 –

2014027 –

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25136	9/3/65	G. Harano
–	CLASS A RELEASED PER TORR 2444 R		



NOTES

1. INSTALL UNIV DSKY USING MTG KIT 2014023-011

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	LIST OF MATERIALS		

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ± DECIMALS .xxx ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

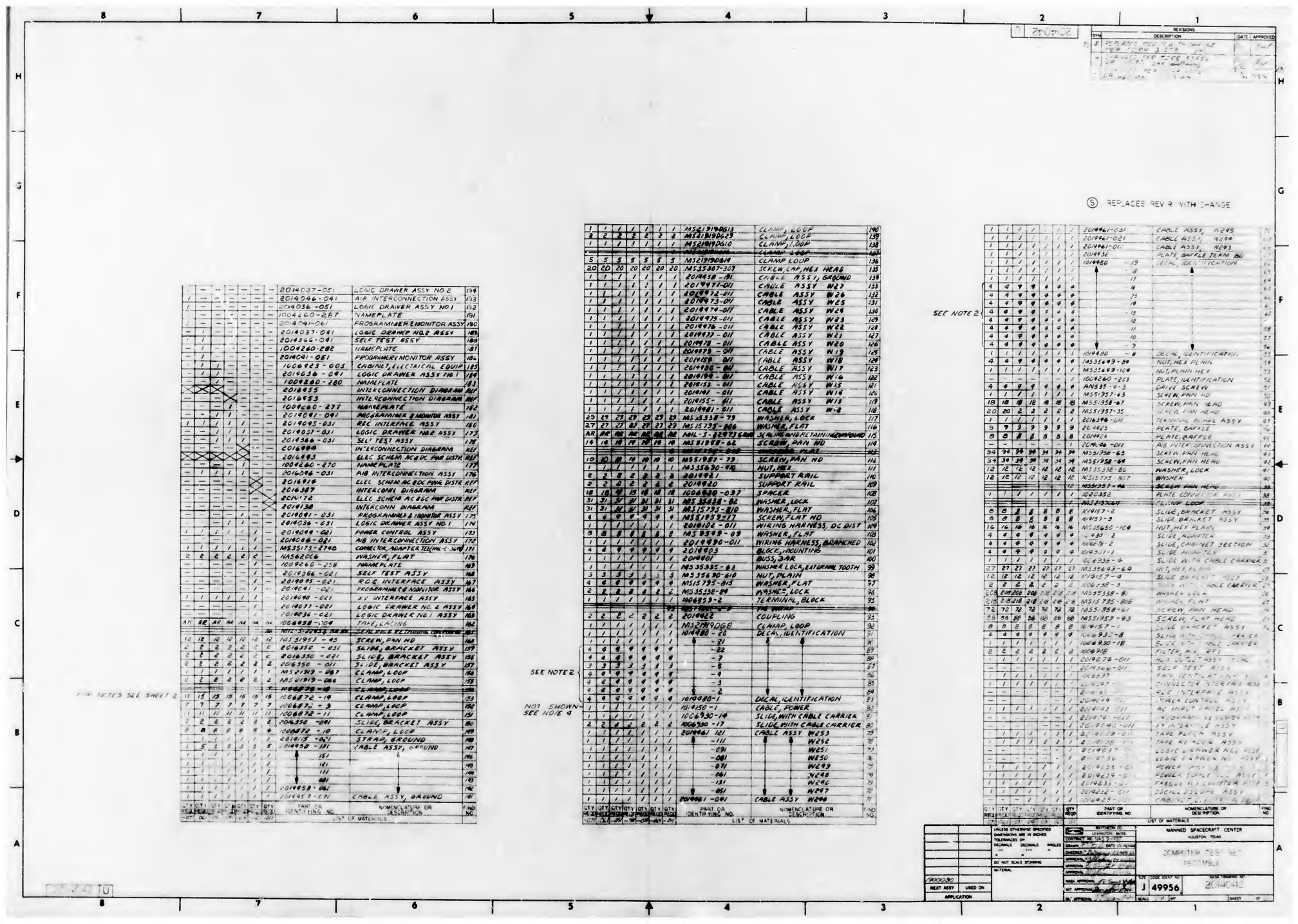
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN M. Mealy DATE 7 MAY 65
CHECKED W. Lyons 30 JUL 65
APPROVAL R S Duff 6 AUG '65
APPROVAL J. Yakish 9 AUG '65
APPROVAL [illegible] 1 Sept 65
NASA APPROVAL A. C. METZGER
MIT APPROVAL [signature] 12/6/65
MIT APPROVAL G. Harano 12/6/65

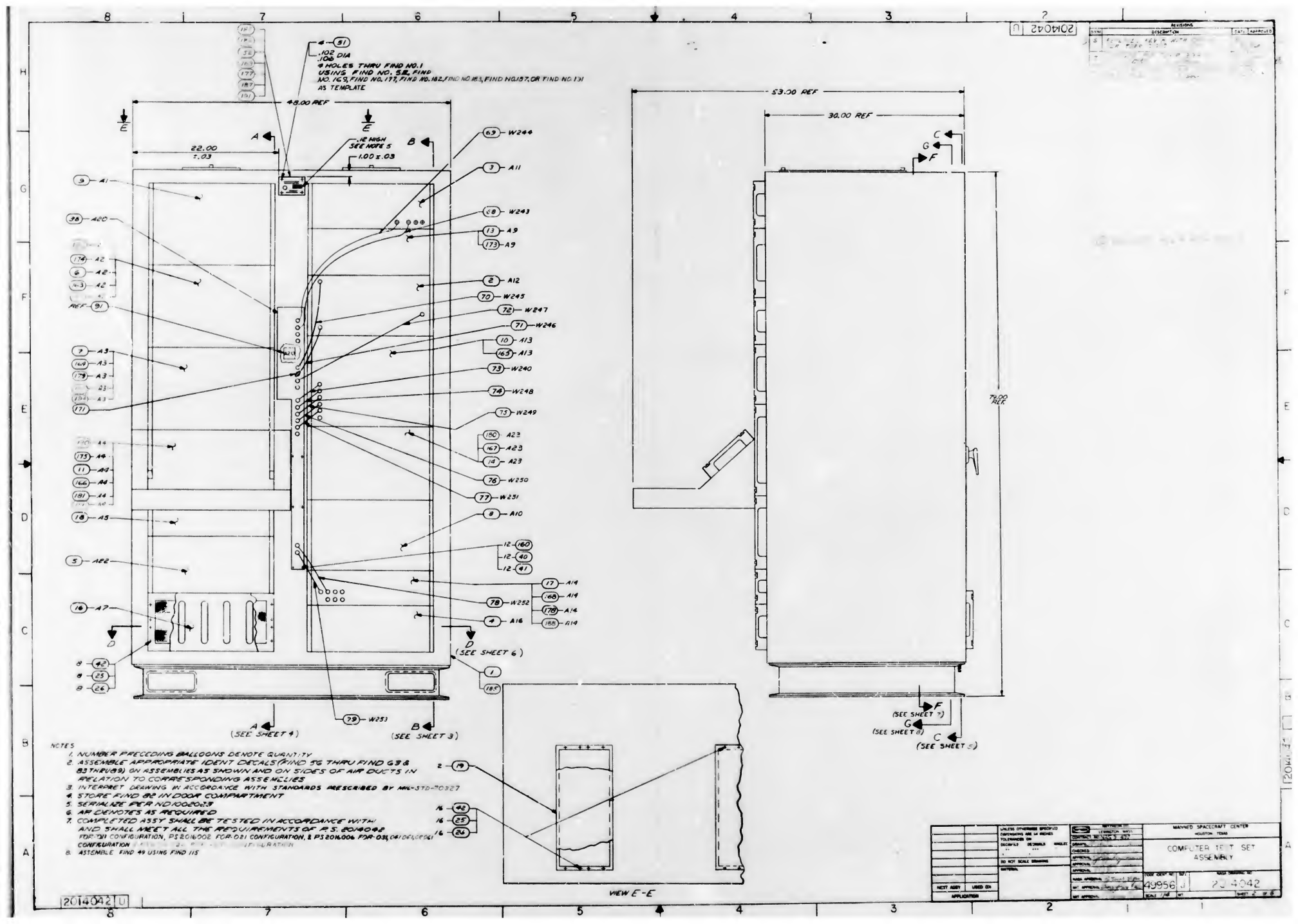
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

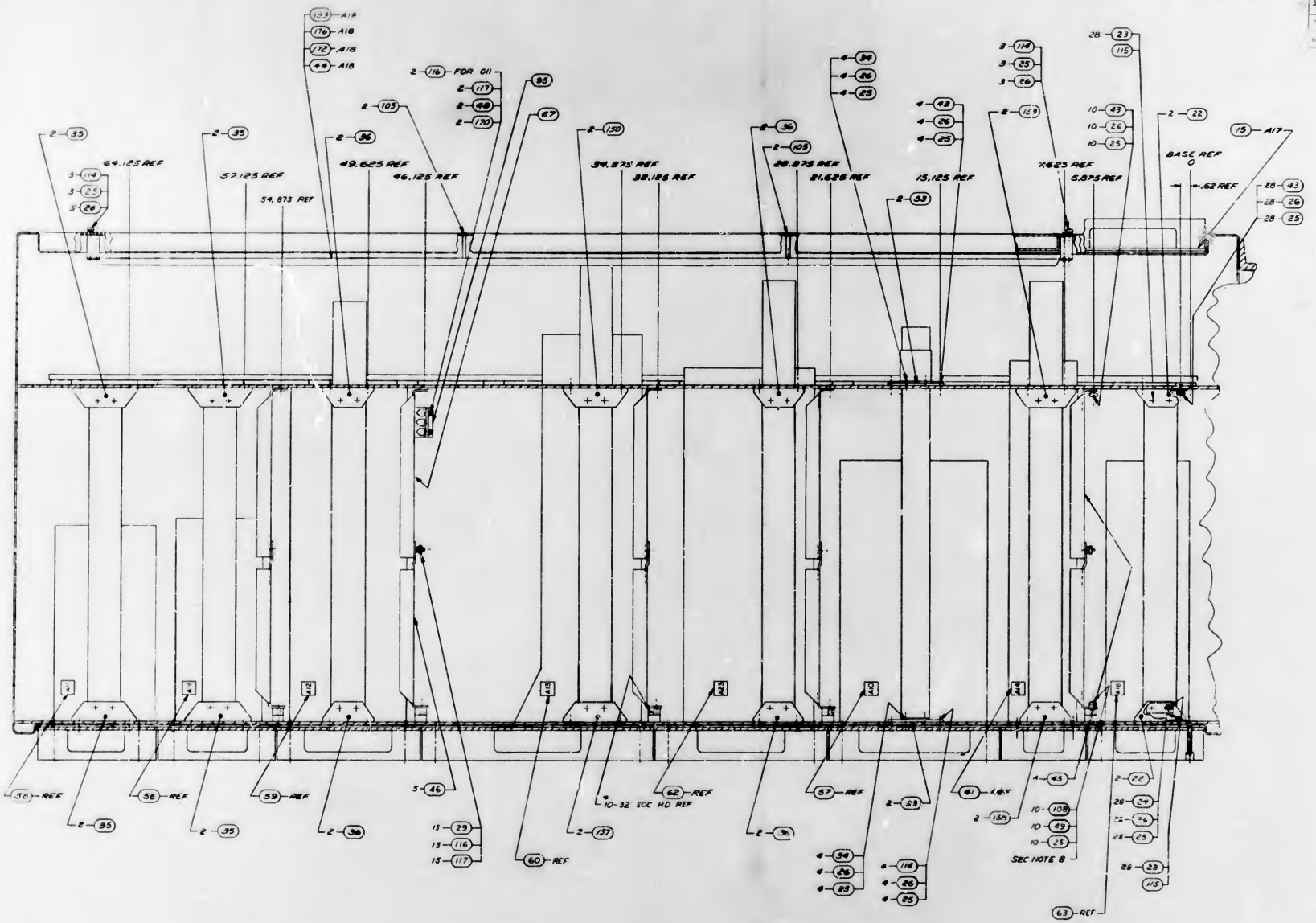
INSTALLATION DRAWING
AGC DSKY (BLK II SERIES)

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	2014027
SCALE 1/1	WT	SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327




48.00 REF
22.00 ±.03
.12 HIGH SEE NOTE 5
1.00 ±.03
.102 DIA .108
4 HOLES THRU FIND NO.1 USING FIND NO. 5 OR FIND NO. 165, FIND NO. 177, FIND NO. 182, FIND NO. 183, FIND NO. 187, OR FIND NO. 191 AS TEMPLATE
53.00 REF
30.00 REF
79.00 REF
(SEE SHEET 4)
(SEE SHEET 3)
(SEE SHEET 6)
(SEE SHEET 7)
(SEE SHEET 8)
(SEE SHEET 5)
VIEW E-E
NOTES:
1. NUMBER PRECEDING BALLOONS DENOTE QUANTITY
2. ASSEMBLE APPROPRIATE IDENT DECALS (FIND 56 THRU FIND 63 & 83 THRU 89) ON ASSEMBLIES AS SHOWN AND ON SIDES OF AIR DUCTS IN RELATION TO CORRESPONDING ASSEMBLIES
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-STD-70327
4. STORE FIND 82 IN DOOR COMPARTMENT
5. SERIALIZE PER NO1000033
6. AR DENOTES AS REQUIRED
7. COMPLETED ASSY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL THE REQUIREMENTS OF P.S. 20M0002 FOR 731 CONFIGURATION, PS 20M0002 FOR 081 CONFIGURATION, & PS 20M0004 FOR 031, 041 DELETED CONFIGURATION
8. ASSEMBLE FIND 49 USING FIND 115
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
COMPUTER TEST SET ASSEMBLY
49956
2014042
2014042 U



SECTION B-B
ROTATED 90° CCW
(SEE SHEET 2)

CONTRACT NO.	NAS 9-997
DRAWN	
CHECKED	
ENGINEER	
APPROVED	
MATERIAL	
NEXT ASSY	USED ON
APPLICATION	

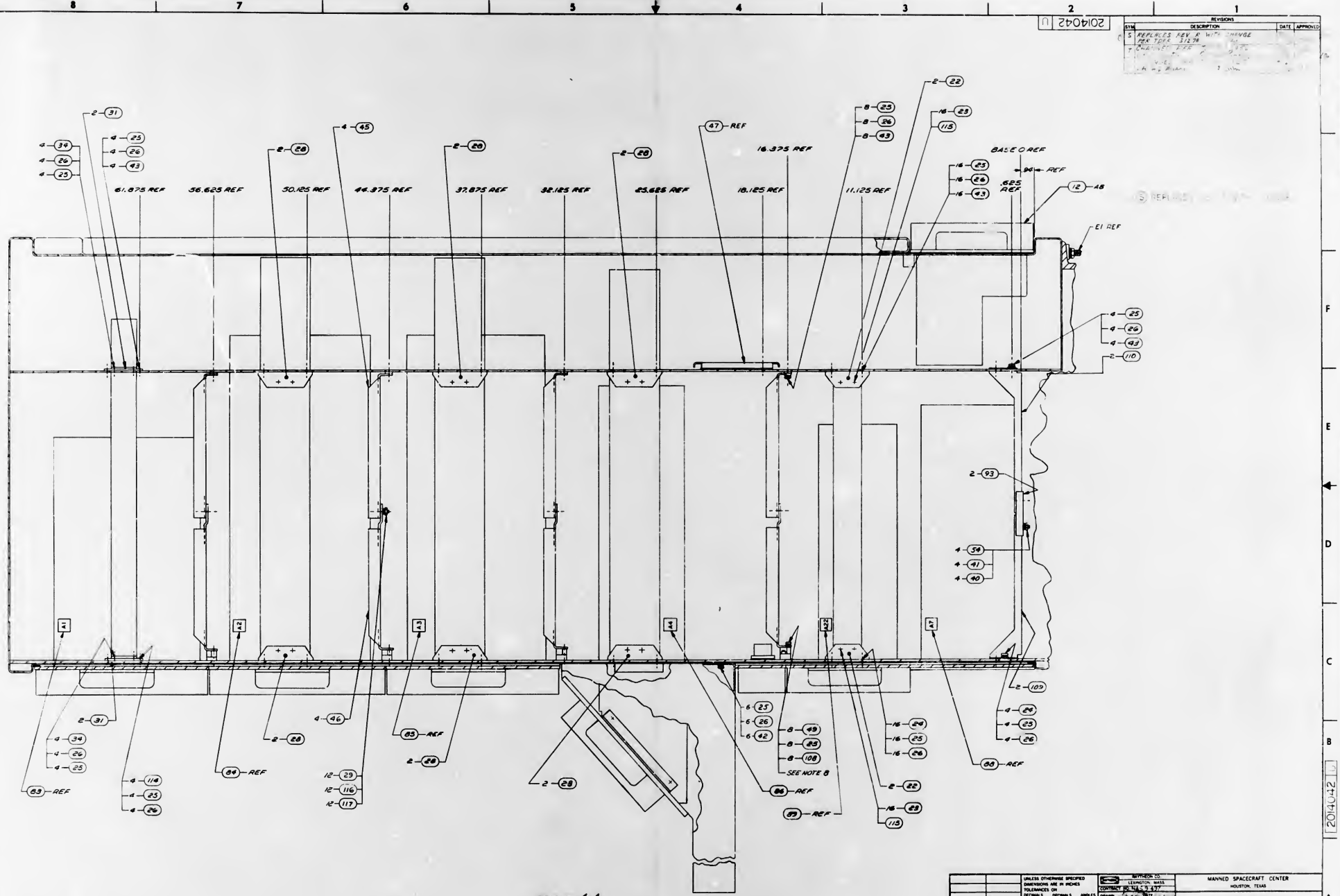
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

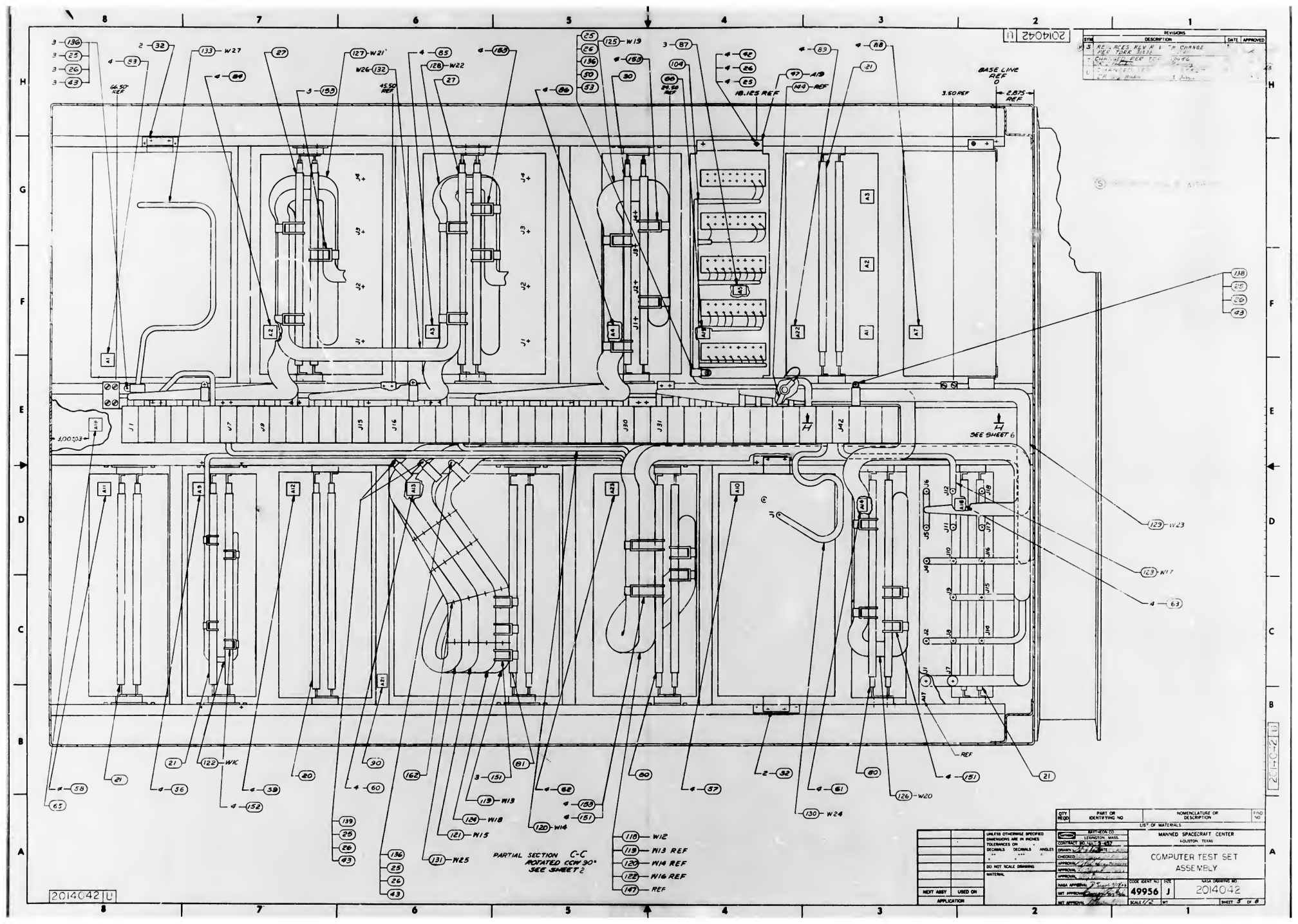
COMPUTER TEST SET
ASSEMBLY

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	J	2014042

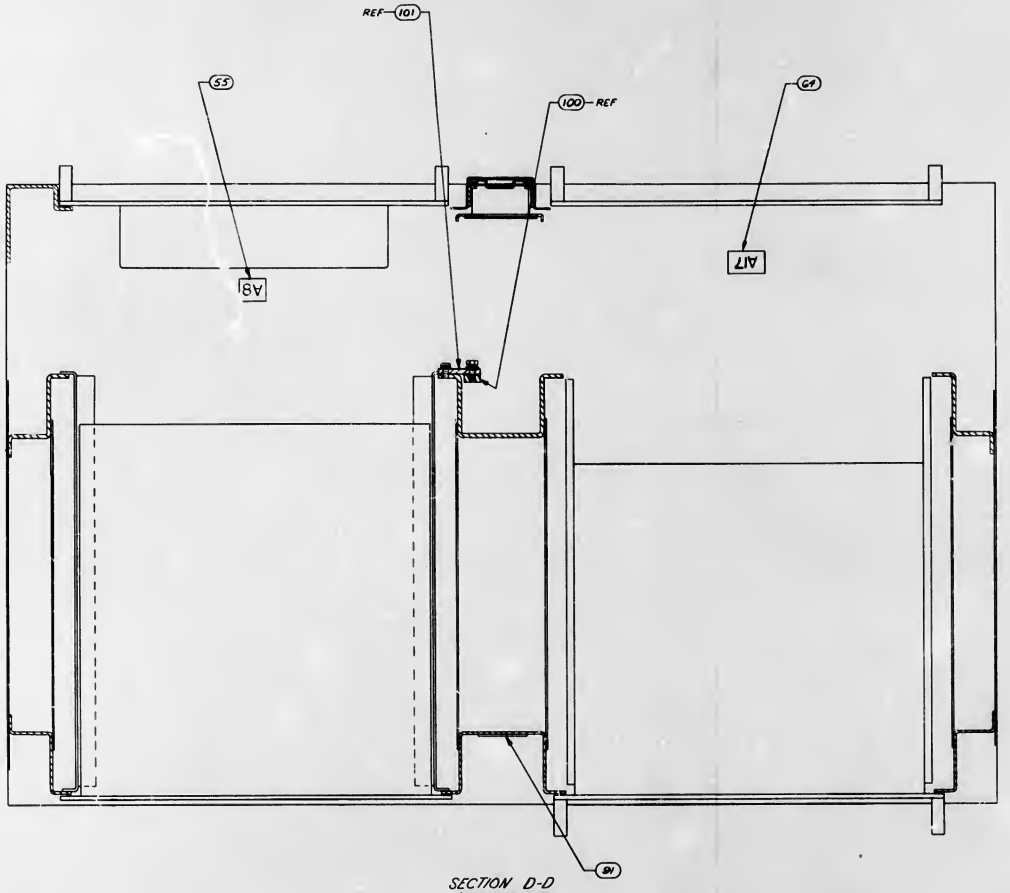
SCALE 1/2 | WT | SHEET 2 OF 8

2014042 U

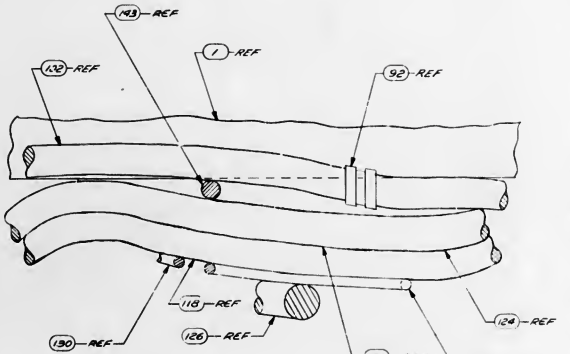

2014042 U
REVISIONS
SYM DESCRIPTION DATE APPROVED
S REPLACES REV R WITH CHANGE PER TDR S/C 78
T CHANGE PER TDR
61.875 REF
56.625 REF
50.125 REF
44.375 REF
37.875 REF
32.125 REF
25.625 REF
18.125 REF
16.375 REF
11.125 REF
47 REF
BASE O REF
.625 REF
.94 REF
E1 REF
SEE NOTE 8
SECTION A-A
ROTATED 90° CCW
SEE SHEET 2
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
COMPUTER TEST SET
ASSEMBLY
CODE IDENT NO 49956
NASA DRAWING NO 2014042
SCALE 1/2
SHEET 4 OF 8
2014042 U


2014042
REVISIONS
SYM DESCRIPTION DATE APPROVED
BASE LINE REF 0
3.50 REF
2.875 REF
18.125 REF
66.50 REF
45.50 REF
84.50 REF
SEE SHEET 6
PARTIAL SECTION C-C ROTATED CCW 90° SEE SHEET 2
W27
W21
W26
W22
W19
W23
W17
W20
W24
W12
W13 REF
W14 REF
W16 REF
W25
W18
W15
W14
REF
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX .XXX ANGLES
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY USED ON
APPLICATION
QTY REQD PART OR IDENTIFYING NO NOMENCLATURE OR DESCRIPTION FIND NO
LIST OF MATERIALS
RAYTHEON CO LEXINGTON, MASS.
CONTRACT NO NAS 9-457
DRAWN
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL
MANNED SPACECRAFT CENTER HOUSTON, TEXAS
COMPUTER TEST SET ASSEMBLY
CODE IDENT NO 49956
SIZE J
NASA DRAWING NO 2014042
SCALE 1/2
WT
SHEET 5 OF 8
2014042 U

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
S	REPLACES REV P PER TOR [illegible]		
T	CHANGED PER [illegible]		



SECTION D-D
(SEE SHEET 2)



VIEW H-H
SCALE-NONE
SEE SHEET 5

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .** ±.02 DECIMALS .*** ±.005 ANGLES ±1°
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-537
DRAWN — DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

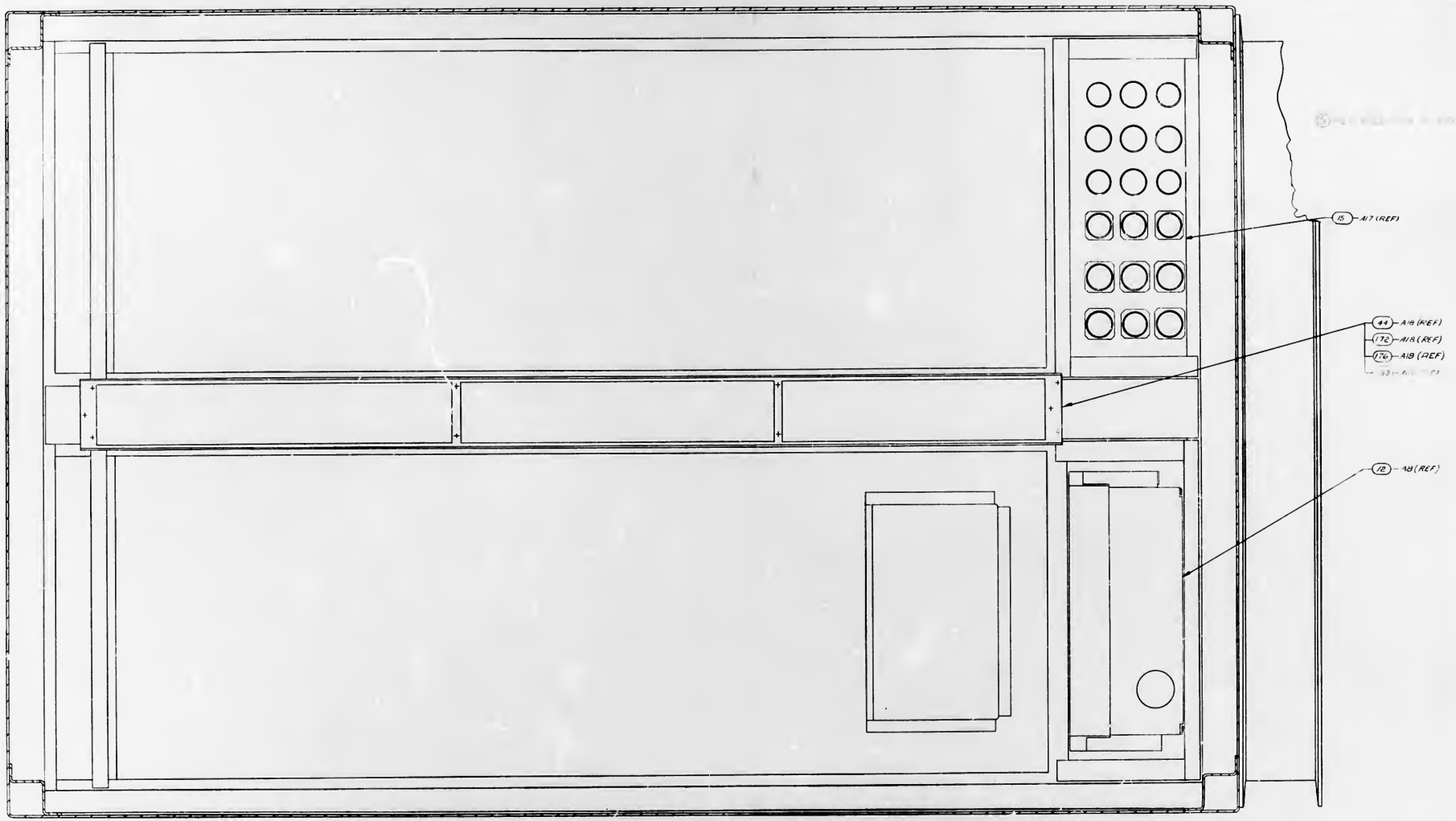
COMPUTER TEST SET
ASSEMBLY

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014042
SCALE 1/8 | WT | SHEET 6 OF 8

2014042 U

2014042 U

SYM	REVISIONS DESCRIPTION	DATE	APPROVED
S	*REPLACES REV R WITH CHANGE PER TOER 3197*		
T	CHANGE PER TOPA 3340		



SECTION F-F
ROTATED 90° CCW
(SEE SHEET 2)

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION
	LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .X .XX .XXX ANGLES
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS9-197
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

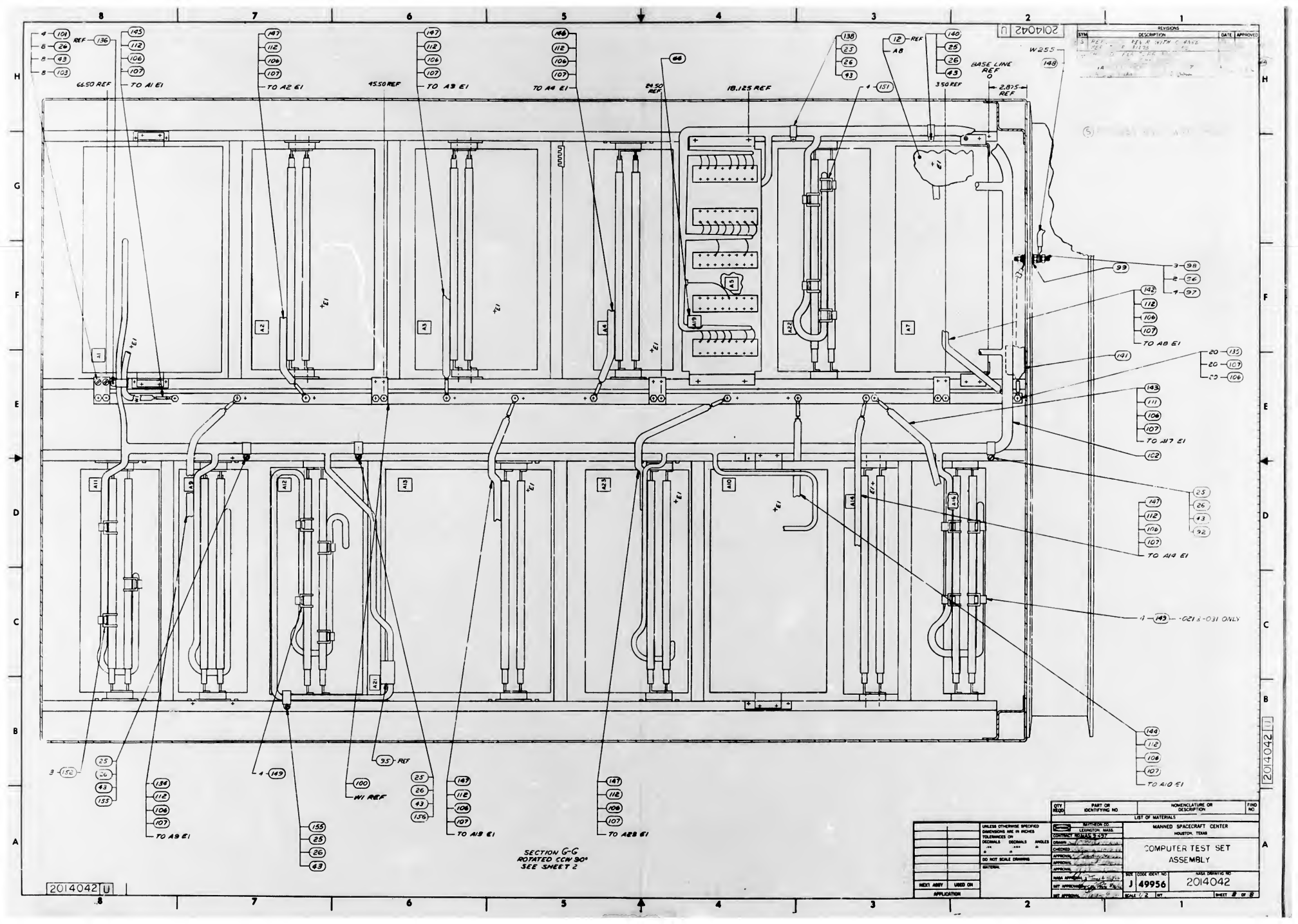
MANNED SPACECRAFT CENTE HOUSTON, TEXAS

COMPUTER TEST SET ASSEMBLY

CODE IDENT NO	SIZE	NASA DSG. NO.
49956	J	2014042

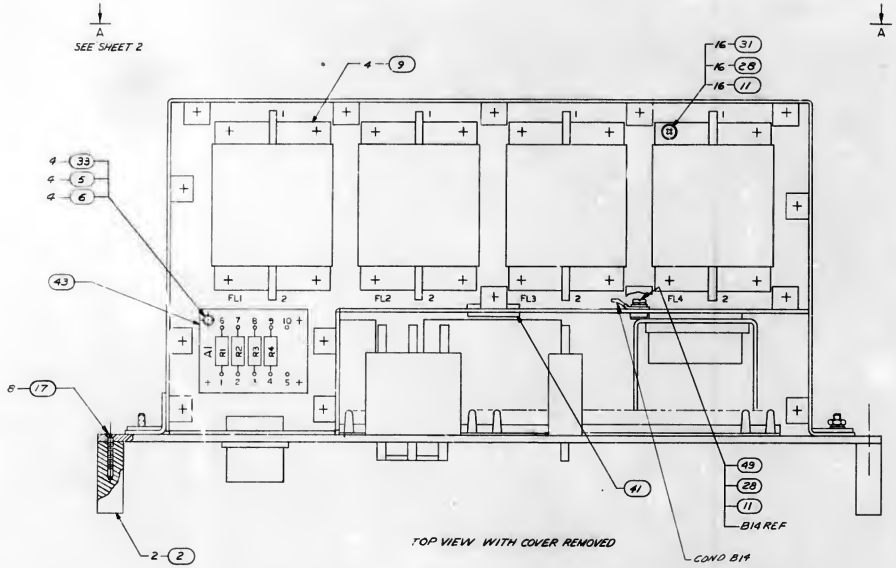
SCALE 1/2 WT SHEET 7 OF 8

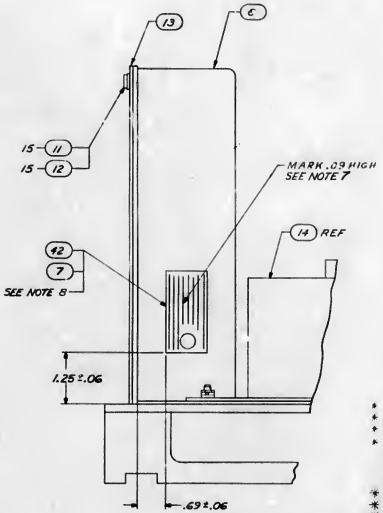
2014042 U

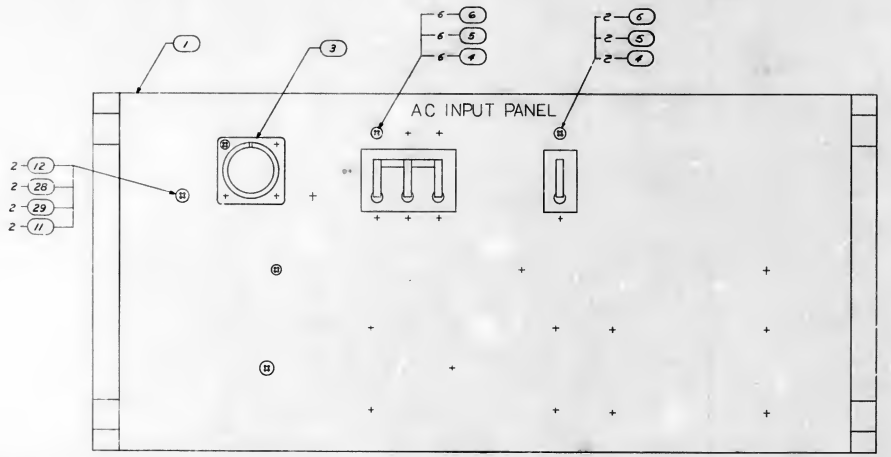

REVISIONS
SYM DESCRIPTION DATE APPROVED
2014042 U
W25.5
BASE LINE REF 0
2.875 REF
3.50 REF
18.125 REF
8.450 REF
45.50 REF
66.50 REF
TO A1 E1
TO A2 E1
TO A3 E1
TO A4 E1
TO A5 E1
TO A6 E1
TO A7 E1
TO A8 E1
TO A9 E1
TO A10 E1
TO A11 E1
TO A12 E1
TO A13 E1
TO A14 E1
W1 REF
-021 & -031 ONLY
SECTION G-G ROTATED CCW 90° SEE SHEET 2
RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NUMBER 9397
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
COMPUTER TEST SET ASSEMBLY
J 49956
2014042
SCALE 1/2
SHEET 1 OF 6
2014042 U

2014043 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
D	RELEASED PER CCA 2456		
	CHANGED PER CCA 2456 CR 8 Feb CHK		
E	CLASS A RELEASED PER TDRR 2047		
A	CHANGED PER TDRR 2112 CR 4 Jan CHK		
B	CHANGED PER TDRR 2213 CR 10 Feb CHK		
C	CHANGED PER TDRR 2414 CR 7 May CHK		







	2014042	SCHEMATIC	REF
*	1.0 MIL-W-16878/5 EE10	WIRE, ELEC, BLACK	54
*	1.5 SEE NOTE 17	INSULATION SLEEVING	53
*	1.5 SEE NOTE 17	INSULATION SLEEVING	52
*	1.5 SEE NOTE 17	INSULATION SLEEVING	51
	8 MS25036-56	TERMINAL LUG	50
	1 MS51957-93	SCREW, FAN HD	49
	AR 1006458-004	LACING CORD	48
*	28 MIL-W-16878/5 EE8	WIRE, ELEC., WHT	47
*	5.0 MIL-W-16878/5 EE10	WIRE, ELEC, WHT	46
*	5.6 MIL-W-16878/5 EE18	WIRE, ELEC, WHT	45
*	1.7 MIL-W-16878/5 EE8	WIRE, ELEC, BLK	44
	1 2014390-011	COMPONENT BOARD A1 ASSY	43
	1 1004260-238	PLATE, IDENT	42
	1 MS 35489-45	GROMMET, RUBBER	41
*	1.0 SEE NOTE 9	INSULATION SLEEVING	40
	2 MS25036-15	TERMINAL LUG	39
	3 MS25036-12	TERMINAL LUG	38
	4 MS25036-3	TERMINAL LUG	37
	1 MS25036-19	TERMINAL LUG	36
	1 MS35430-11	TERMINAL LUG	35
	6 MS51957-47	SCREW, PAN HD	34
	8 MS51957-30	SCREW, PAN HD	33
	16 MS35337-80	WASHER, LOCK	32
	16 MS51957-44	SCREW, PAN HD	31
	2 1006326	RELAY, ARMATURE	30
	16 MS35649-84	NUT, PLAIN	29
	32 MS35338-80	WASHER LOCK	28
	1 2014149-011	WIRING HARNESS	27
	24 MS35649-64	NUT, HEX	26
	1 1006914-32	CIRCUIT BREAKER ASSY	25
	1 MS27212-1-20	TERMINAL BOARD ASSY	24
	1 1006915-11	CIRCUIT BREAKER	23
	8 MS35335-60	WASHER, LOCK EXT TOOTH	22
	7 MS35649-64	NUT, HEX	21
	7 MS15795-803	WASHER, FLAT	20
	7 MS35338-78	WASHER, LOCK	19
	3 MS51957-16	SCREW, PAN HD	18
	8 MS51953-48	SCREW, FLAT HD	17
	4 MS25226-2-3	BUS, TERMINAL BD	16
	1 1014249	BRACKET, CONN	15
	1 1020360	COVER	14
	1 1020359	COVER, FILTER HOUSING	13
	21 MS51957-46	SCREW, PAN HD	12
	48 MS15795-807	WASHER, FLAT	11
	4 MS51957-18	SCREW, PAN HD	10
	4 1006654	FILTER, RI	9
	1 2014404	HOUSING, FILTER	8
	AR MIL-A-5092, TYPE II	CEMENT	7
	36 MS15795-805	WASHER, FLAT	6
	36 MS35338-79	WASHER, LOCK	5
	8 MS51957-28	SCREW, PAN HD	4
	1 MS3102R-22-22P	CONNECTOR, RECEPTACLE	3
	2 1014215-4	HANDLE ASSY	2
	1 2014405	PANEL, FRONT	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

-011 LIST OF MATERIALS

NOTES:
1. UNLESS OTHERWISE SPECIFIED STRIP ALL LEADS .50±.06 & TIN PER ND1002071
2. STRIP .25 DO NOT TIN & ATTACH FIND NO.38 AND 1.00±.06 OF FIND NO.51
3. STRIP .5 DO NOT TIN & ATTACH FIND NO.39 AND 1.00±.06 OF FIND NO.53
4. SOLDER & TIN PER ND 1002071
5. FOR FABRICATION, SEE ND1002032, EXCEPT USE FIND NO 48.
6. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
7. SERIALIZE PER ND1002023.
8. BUND FIND NO.42 TO FIND NO.8 USING FIND NO.7.
9. MIL-I-23053 CLASS 1, BLK, ID .250
10. SLEEVE USING .75 LG OF FIND NO. 40
11. STRIP .15 DO NOT TIN & ATTACH FIND NO. 37 AND 1.00±.06 OF FIND NO.52
12. STRIP .9 DO NOT TIN & ATTACH FIND NO. 36 AND 1.00±.06 OF FIND NO.52
13. STRIP .15 DO NOT TIN & ATTACH FIND NO. 35 AND 1.00±.06 OF FIND NO.53
14. CRIMP PER ND1002206
15. AR DENOTES AS REQUIRED

FRONT VIEW

16. STRIP .25 DO NOT TIN & ATTACH FIND NO. 50 AND 1.00±.06 OF FIND NO.51 (BOTH ENDS)
17. MIL I-23053, CLASS 1, WHT, ID .163 FOR FIND NO.51, ID .125 FOR FIND NO.52, ID .250 FOR FIND NO 53
18. MARK SLEEVING WITH REF DESTINATIONS 12 HIGH BLACK PER ND 1002019
19. MARK CONDUCTOR IDENTIFICATION PER ND 1002019
20. STRIP .25 DO NOT TIN & ATTACH FIND NO. 38 AND 1.75±.06 OF FIND NO. 51

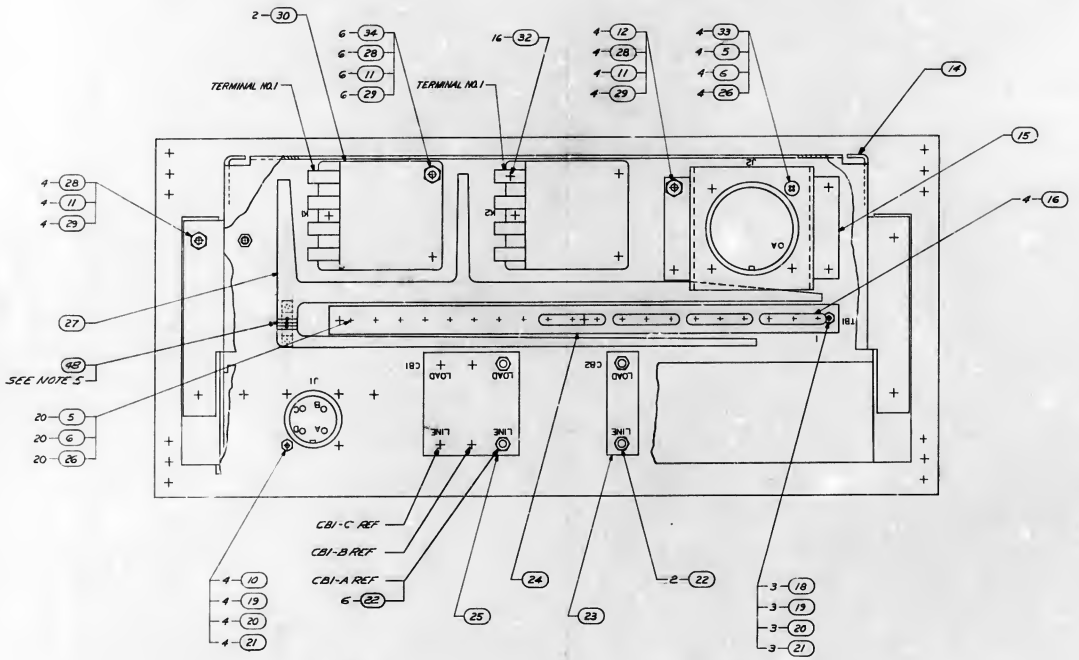
* DENOTES LENGTH IN FEET

	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .x ±.03 .xx ±.01 .xxx ±.005 ANGLES ± 1°	RAYTHEON CO. LEXINGTON, MASS. CONTRACT NO. NAS 9-4781 DRAWN J. Peck DATE 7-21-61 CHECKED M. Ward DATE 7-31-61 APPROVAL F. Pope DATE 8-4-61 APPROVAL APPROVAL APPROVAL NASA APPROVAL DIST APPROVAL DIST APPROVAL
2014042	DO NOT SCALE DRAWING	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	AC INPUT PANEL ASSEMBLY COMPUTER TEST SET
APPLICATION	MATERIAL	CODE IDENT NO. 49956 SIZE J NASA DRAWING NO. 2014043 SCALE 1/1 WT SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014043 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
D	RELEASED PER CCA A25456		
J	CHANGED PER CCA A25456 CR B7 Test CHK APPD		
-	CLASS A RELEASED PER TDRR 26313		
A	CHANGED PER TDRR 26313 DR A Engrg CHK APPD		
B	CHANGED PER TDRR 26313 DR Test CHK APPD		
C	CHANGED PER TDRR 2631 & 30 Engrg CHK APPD		



VIEW A-A
SEE SHEET 1

JUMPER CHART

COND IDENT	FROM REMARKS	FROM DESTINATION	DESCRIPTION COLOR	AWG	LENGTH	FIND NO.	TO DESTINATION	TO REMARKS
B1		A1-1	WHT	18	.8FT	45	FL1-1	SEE NOTE 11
B2		A1-2	WHT	18	1.2FT	45	FL2-1	↕
B3		A1-3	WHT	18	1.6FT	45	FL3-1	
B4		A1-4	WHT	18	2.0FT	45	FL4-1	SEE NOTE 11
B5	STRIP .25 SEE NOTES 4&10	U1-C	WHT	10	.9FT	46	FL1-1	SEE NOTE 2
B6	STRIP .85 SEE NOTES 4&10	U1-B	WHT	10	1.0FT	46	FL2-1	↕
B7	STRIP .85 SEE NOTES 4&10	U1-A	WHT	10	1.3FT	46	FL3-1	SEE NOTE 2
B8	STRIP .25 SEE NOTES 4&10	U1-D	WHT	8	1.6FT	47	FL4-1	SEE NOTE 3
B9		A1-9	BLK	18	1.7FT	44	K1-4A	SEE NOTE 12
B10	SEE NOTE 2	FL1-2	WHT	10	.9FT	46	CB1-C LINE	SEE NOTE 20
B11	↕	FL2-2	WHT	10	.5FT	46	CB1-B LINE	↕
B12	SEE NOTE 2	FL3-2	WHT	10	.4FT	46	CB1-A LINE	SEE NOTE 20
B13	SEE NOTE 3	FL4-2	WHT	8	1.2FT	47	TB1-3	SEE NOTE 13
B14	SEE NOTE 16	K1-4B	BLK	10	1.0FT	54	EE	SEE NOTE 16

ROUTE THRU FIND NO. 41

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO NAS 9-97
DRAWN DATE 7/14/67
CHECKED 8/JUN 68
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .03 ANGLES
DO NOT SCALE DRAWING
MATERIAL

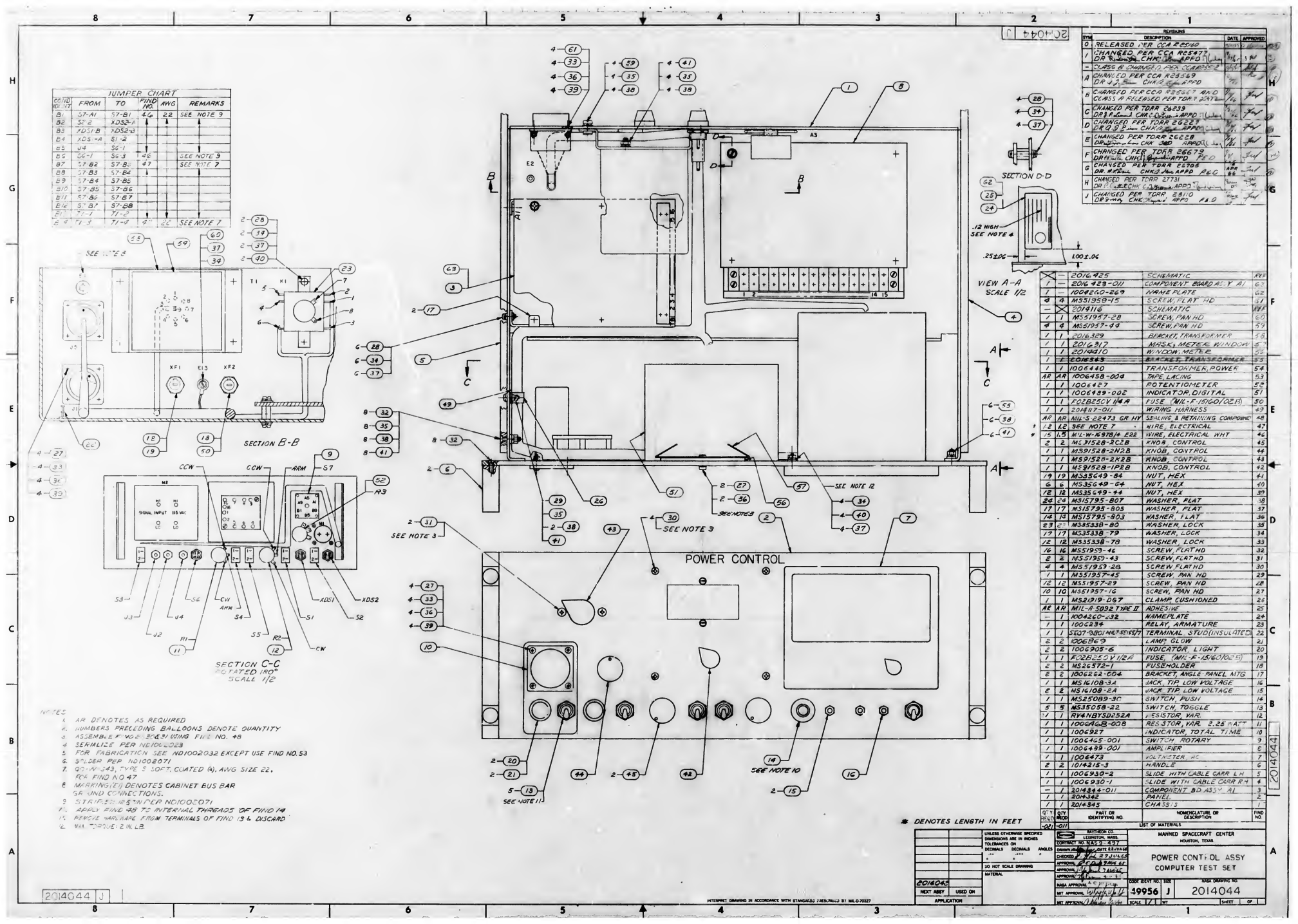
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AC INPUT PANEL ASSEMBLY
COMPUTER TEST SET

2014042
NEXT ASSY USED ON
APPLICATION

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014043
SCALE 1/1 | WT | SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327



JUMPER CHART					
COND. IDENT.	FROM	TO	FIND NO.	AWG	REMARKS
B1	S7-A1	S7-B1	46	22	SEE NOTE 9
B2	S7-2	XDS2-A			
B3	XDS1-B	XDS2-B			
B4	XDS1-A	S1-2			
B5	J4	S6-1			
B6	S6-1	S6-3	46		SEE NOTE 9
B7	S7-B2	S7-B5	47		SEE NOTE 7
B8	S7-B3	S7-B4			
B9	S7-B4	S7-B6			
B10	S7-B5	S7-B6			
B11	S7-B6	S7-B7			
B12	S7-B7	S7-B8			
B13	T1-1	T1-2			
B14	T1-3	T1-4	47	22	SEE NOTE 7

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA #25140		
1	CHANGED PER CCA #26477 DR CHK APPD		
-	CLASS B CHANGED PER CCA #26552		
A	CHANGED PER CCA #26569 DR CHK APPD		
B	CHANGED PER CCA #26567 AND CCA #25 RELEASED PER TDRR 26737		
C	CHANGED PER TDRR 26239 DR CHK APPD		
D	CHANGED PER TDRR 26227 DR CHK APPD		
E	CHANGED PER TDRR 26228 DR CHK APPD		
F	CHANGED PER TDRR 26679 DR CHK APPD REC		
G	CHANGED PER TDRR 26705 DR CHK APPD REC		
H	CHANGED PER TDRR 27731 DR CHK APPD		
J	CHANGED PER TDRR 28110 DR CHK APPD F.S.D		

QTY REQD	QTY PER ASSY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		-021-011	LIST OF MATERIALS	
-	-	2016425	SCHEMATIC	REF
1	-	2016423-011	COMPONENT BOARD ASSY A1	62
1	1	1006260-269	NAMEPLATE	62
6	4	MS51959-15	SCREW, FLAT HD	61
-	X	2018116	SCHEMATIC	REF
1	1	MS51957-28	SCREW, PAN HD	60
4	4	MS51957-44	SCREW, PAN HD	59
1	1	2016329	BRACKET, TRANSFORMER	58
1	1	2016317	MASK, METER WINDOW	57
1	1	2014410	WINDOW, METER	56
1	1	FOR #53	BRACKET, TRANSFORMER	55
1	1	1006440	TRANSFORMER, POWER	54
AR	AR	1006458-004	TAPE, LACING	53
1	1	1006427	POTENTIOMETER	52
1	1	1006489-002	INDICATOR, DIGITAL	51
1	1	FOZB25CV 1/4A	FUSE (MIL-F-15160/0218)	50
1	1	2014117-011	WIRING HARNESS	49
AR	AR	MIL-S-22473 GR HY	SEALING & RETAINING COMPOUND	48
1.2	1.2	SEE NOTE 7	WIRE, ELECTRICAL	47
1.5	1.5	MIL-W-16878/4 E22	WIRE, ELECTRICAL WHT	46
2	2	MS27528-2C2B	KNOB, CONTROL	45
1	1	MS27528-2N2B	KNOB, CONTROL	44
1	1	MS27528-2R2B	KNOB, CONTROL	43
1	1	MS27528-1P2B	KNOB, CONTROL	42
19	19	MS35649-84	NUT, HEX	41
6	6	MS35649-64	NUT, HEX	40
12	12	MS35649-44	NUT, HEX	39
24	24	MS15795-807	WASHER, FLAT	38
17	17	MS15795-805	WASHER, FLAT	37
14	13	MS15795-803	WASHER, FLAT	36
23	23	MS35338-80	WASHER, LOCK	35
17	17	MS35338-79	WASHER, LOCK	34
12	12	MS35338-78	WASHER, LOCK	33
16	16	MS51959-46	SCREW, FLAT HD	32
2	2	MS51959-43	SCREW, FLAT HD	31
4	4	MS51959-28	SCREW, FLAT HD	30
1	1	MS51957-45	SCREW, PAN HD	29
12	12	MS51957-29	SCREW, PAN HD	28
10	10	MS51957-16	SCREW, PAN HD	27
1	1	MS21919-D67	CLAMP, CUSHIONED	26
AR	AR	MIL-A-5092 TYPE II	ADHESIVE	25
-	1	1004260-232	NAMEPLATE	24
1	1	1006234	RELAY, ARMATURE	23
1	1	SE07-9801 MIL-T-55155/7	TERMINAL, STUD (INSULATED)	22
2	2	1006963	LAMP, GLOW	21
2	2	1006905-5	INDICATOR, LIGHT	20
1	1	FOZB25CV 1/2A	FUSE (MIL-F-15160/0219)	19
2	2	MS25472-1	FUSEHOLDER	18
2	2	1006262-004	BRACKET, ANGLE-PANEL MTG	17
1	1	MS16108-3A	JACK, TIP LOW VOLTAGE	16
2	2	MS16108-2A	JACK, TIP LOW VOLTAGE	15
1	1	MS25089-3C	SWITCH, PUSH	14
5	5	MS35058-22	SWITCH, TOGGLE	13
1	1	RV4NBYSD252A	RESISTOR, VAR.	12
1	1	1006468-008	RESISTOR, VAR. 2.25 WATT	11
1	1	1006927	INDICATOR, TOTAL TIME	10
1	1	1006465-001	SWITCH, ROTARY	9
1	1	1006499-001	AMPLIFIER	8
1	1	1006473	VOLTMETER, AC	7
2	2	2014215-3	HANDLE	6
1	1	1006930-2	SLIDE WITH CABLE CARR. L.H.	5
1	1	1006930-1	SLIDE WITH CABLE CARR R.H.	4
-	1	2014344-011	COMPONENT BD ASSY A1	3
1	1	2014342	PANEL	2
1	1	2014345	CHASSIS	1

* DENOTES LENGTH IN FEET

NOTES:
1. AR DENOTES AS REQUIRED
2. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
3. ASSEMBLE F.W.G. #1, #2, #3 USING FIND NO. 48
4. SERIALIZE PER ND1006023
5. FOR FABRICATION SEE ND1002032 EXCEPT USE FIND NO. 53
6. SOLDER PER ND1002071
7. QQ-W-343, TYPE I, SOFT, COATED (4), AWG SIZE 22. FOR FIND NO 47
8. MARKING(21) DENOTES CABINET BUS BAR GROUND CONNECTIONS.
9. STRIP PER ND1002071
10. APPLY FIND 48 TO INTERNAL THREADS OF FIND 14
11. REMOVE HARDWARE FROM TERMINALS OF FIND 13 & DISCARD
12. MAX TORQUE 2 IN. LB.

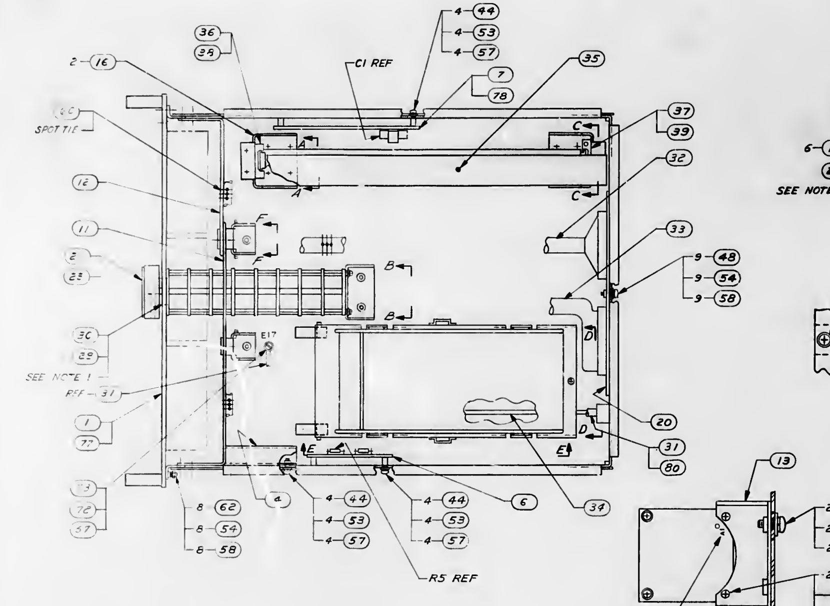
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

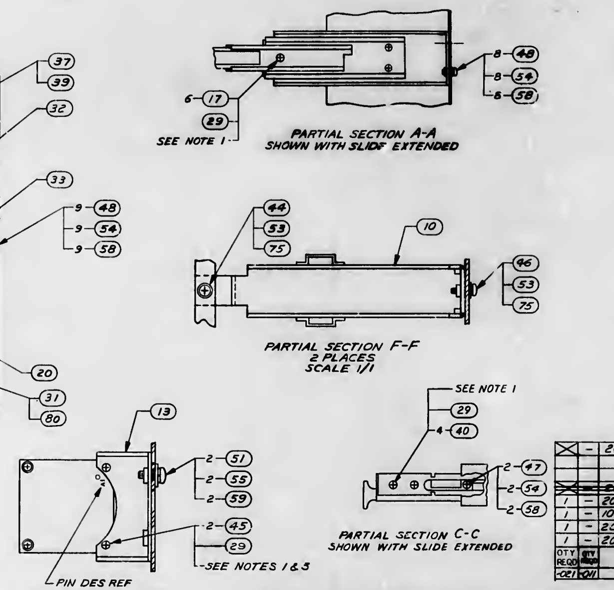
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .xx ±.01 DECIMALS .xxx ±.005 ANGLES ± 1°	RAYTHEON CO. LEXINGTON, MASS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE DRAWING	CONTRACT NO. NAS 9-497	POWER CONTROL ASSY COMPUTER TEST SET	
MATERIAL	DRAWN [illegible] DATE 8 APR 66		
2014045	CHECKED J. VAL 27 JULY 66		
NEXT ASSY	APPROVED [illegible] 8 APR 66		
USED ON	APPROVED [illegible] 8 APR 66		
APPLICATION	APPROVED [illegible] 8 APR 66		
	NASA APPROVAL [illegible]		
	MIT APPROVAL [illegible]	CODE IDENT NO. 39956 SIZE J	NASA DRAWING NO. 2014044
	MIT APPROVAL [illegible]	SCALE 1/1 WT	SHEET OF

2014044 J

2014044

2014045 L



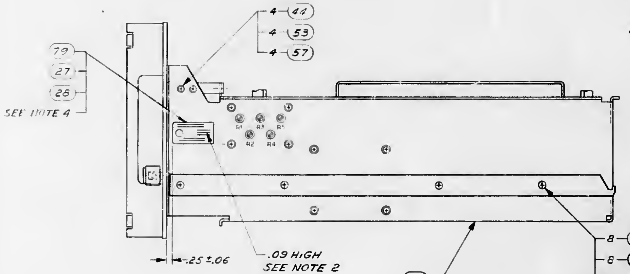


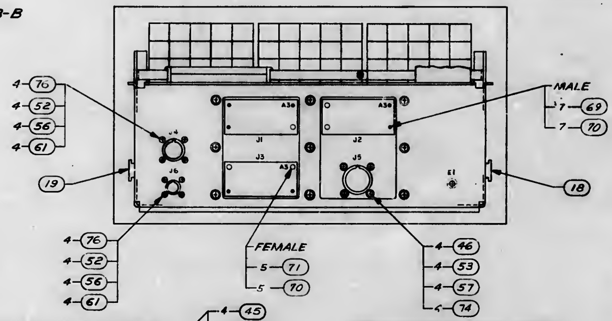
PARTIAL SECTION A-A
SHOWN WITH SLIDE EXTENDED

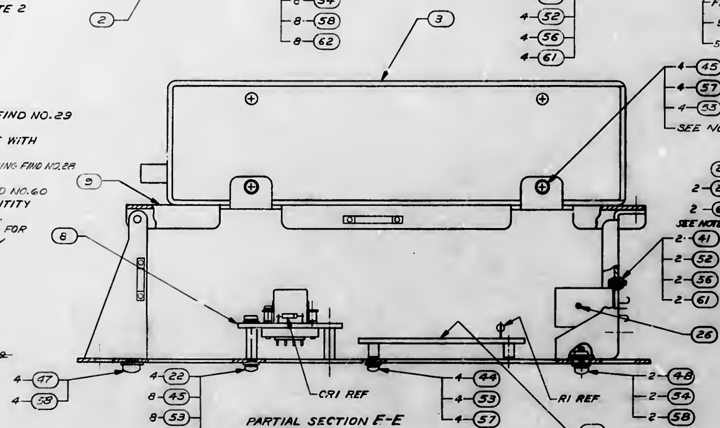
PARTIAL SECTION F-F
2 PLACES
SCALE 1/1

PARTIAL SECTION B-B
SCALE 1/1

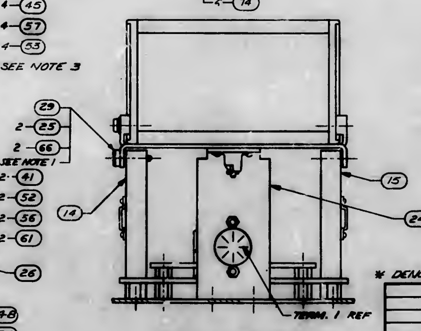
PARTIAL SECTION C-C
SHOWN WITH SLIDE EXTENDED







PARTIAL SECTION E-E
SCALE 1/1



PARTIAL SECTION D-D
SCALE 1/1

NOTES
1. ASSEMBLE FIND NO.17, 25, 30, 40 & 45 USING FIND NO.29
2. SERIALIZE PER ND1002023
3. DISCARD SUPPLIED HARDWARE AND REPLACE WITH HARDWARE THAT IS INDICATED
4. BOND FIND NO. 27 OR FIND NO.79 TO FIND NO.2 USING FIND NO.28
5. SOLDER PER ND1002071
6. FABRICATE PER ND1002032 EXCEPT USE FIND NO.60
7. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
8. MARK CONDUCTOR IDENTIFICATION PER ND 1002019.
9. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS PREFIX WITH SUBASSY DESIGNATIONS
10. UNLESS OTHERWISE SPECIFIED STRIP ALL LEADS .50 ±.12 & TIN PER ND1002071
11. QQ-W-343 TYPE S AWG 22 SOFT COATED ø
12. MIL-I-23053 CLASS I COLOR WHITE I.D.125
13. FOR APPLICATION OF FIND 63, 64, 65, 67 & 68 SEE LEAD ELECTRICAL 2014492
~~14. MARK APPROX WEIGHT IN LBS~~
~~15. MARK NORMAL GOTHIC CHARACTERS PER ND1002019 USING BLACK INK 1006256-001~~

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25160		
1	CHANGED PER CCA R25394 DR G.J.Dunn CHK [illegible] APPD [illegible]	[illegible]	[illegible]
–	CLASS B NO CHANGE PER CCA R25502	[illegible]	[illegible]
A	CHANGED PER CCA R25577 DR [illegible] CHK [illegible] APPD	[illegible]	[illegible]
B	CHANGED PER CCA R25669 DR [illegible] CHK [illegible] APPD	[illegible]	[illegible]
C	CHANGED PER CCA R25747 AND CLASS A RELEASED PER TDRR 25472	[illegible]	[illegible]
D	CHANGED PER TDRR 26490 DR E. Uthing CHK [illegible] APPD [illegible]	[illegible]	[illegible]
E	CHANGED PER TDRR 26539 DR P. Winfield CHK [illegible] APPD [illegible]	[illegible]	[illegible]
F	CHANGED PER TDRR 26691 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
G	CHANGED PER TDRR 26690 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
H	CHANGED PER TDRR 26714 DR [illegible] CHK [illegible] APPD	[illegible]	[illegible]
J	CHANGED PER TDRR 28112 DR [illegible] CHK [illegible] APPD	[illegible]	[illegible]
K	CHANGED PER TDRR 29115 DR J. Kelley CHK [illegible] APPD	[illegible]	[illegible]
L	CHANGED PER TDRR 29346 DR [illegible] CHK [illegible] APPD	[illegible]	[illegible]

QTY REQD -021	QTY REQD -011	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
X	–	2016385	SCHEMATIC	REF
X	–	~~2016405~~	~~LEAD, ELECTRICAL~~	~~REF~~
1	–	2016415-011	HARNESS ASSY A	80
1	–	1004260-263	NAME PLATE, IDENT	79
1	–	2014294-021	COMPONENT BOARD ASSY A4	78
1	–	2014327-021	FRONT PANEL ASSEMBLY	77

LIST OF MATERIALS

QTY REQD -021	QTY REQD -011	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
X	X	2014492	LEAD ELECTRICAL	REF
–	X	2014125	SCHEMATIC	REF
8	8	MS51959-17	SCREW, MACH. FLAT HD	76
4	4	2016359	WASHER, FLAT	75
4	4	MS35649-64	NUT, PLAIN, HEX	74
1	1	MS51957-27	SCREW, MACHINE-PAN HD	73
1	1	MS35333-71	WASHER, LOCK, INTERNAL TOOTH	72
5	5	1006671-004	GUIDE, SOCKET	71
12	12	1006671-003	NUT, STOP	70
7	7	1006671-002	GUIDE, PIN	69
SEE NOTE 13* 0.8	0.8	SEE NOTE 12	INSULATION, SLEEVING	68
SEE NOTE 13* 20.0	20.0	1006776-21	INSULATION, SLEEVING, ELEC	67
2	2	1006952-8	WASHER, NYLON	66
SEE NOTE 13* 100.0	100.0	SEE NOTE 11	WIRE, ELEC	65
SEE NOTE 13* 8.0	8.0	1014341-11	WIRE, ELEC TW. PR	64
SEE NOTE 13* 16.0	16.0	MIL-W-16878/4E22	WIRE, ELEC (WHITE)	63
16	16	MS35649-84	NUT, PLAIN, HEX	62
10	10	MS35649-44	NUT, PLAIN, HEX	61
AR	AR	1006458-004	TAPE, LACING	60
2	2	MS15795-808	WASHER, FLAT	59
41	41	MS15795-807	WASHER, FLAT	58
37	37	MS15795-805	WASHER, FLAT	57
10	10	MS15795-803	WASHER, FLAT	56
2	2	MS35338-81	WASHER, LOCK	55
37	37	MS35338-80	WASHER, LOCK	54
40	40	MS35338-79	WASHER, LOCK	53
10	10	MS35338-78	WASHER, LOCK	52
2	2	MS51958-63	SCREW, MACHINE-PAN HD	51
~~–~~	~~4~~	~~MS51957-17~~	~~SCREW, MACHINE-PAN HD~~	~~50~~
8	8	MS51959-47	SCREW, MACHINE-FLAT, CSK HD	49
19	19	MS51957-45	SCREW, MACHINE-PAN HD	48
6	6	-43	↕	47
6	6	-31	↕	46
14	14	-30	↕	45
22	22	MS51957-29	SCREW, MACHINE-PAN HD	44
~~–~~	~~12~~	~~-28~~		~~43~~
~~–~~	~~4~~	~~MS51957-18~~	~~SCREW, MACHINE-PAN HD~~	~~42~~
2	2	MS51957-15	SCREW, MACHINE-PAN HD	41
4	4	MS51959-46	SCREW, MACH.-FLAT CSK HD	40
1	1	1006988-4	SLIDE, CHASSIS	39
1	1	1006988-3	SLIDE, CHASSIS	38
1	1	1006988-2	SLIDE, CHASSIS	37
1	1	1006988-1	SLIDE, CHASSIS	36
1	1	2014376-011	LOGIC PLATE ASSY NO.1	35
1	1	2014177-011	HARNESS ASSY D	34
1	1	2014176-011	HARNESS ASSY C	33
1	1	2014175-011	HARNESS ASSY B	32
–	1	2014174-011	HARNESS ASSY A	31
2	2	MS51959-42	SCREW, MACH.-FLAT CSK HD	30
AR	AR	MIL-S-22473, GR HV	SEALING & RETAINING COMPOUND	29
AR	AR	MIL-A-5092 TYPE II	CEMENT	28
–	1	1004260-235	NAMEPLATE, IDENT	27
1	1	1006444	TRANSFORMER	26
2	2	MS16638-1	SCREW, SHOULDER	25
1	1	2014331	BRACKET, TRANSFORMER	24
1	1	1006928	KNOB, BAR	23
4	4	1006480-007	POST, ELECTRICAL	22
1	1	1006892-4	SWITCH, ROTARY	21
1	1	2014416	PLATE, CONN	20
1	1	1006930-15	SLIDE, CHASSIS, RH	19
1	1	1006930-16	SLIDE, CHASSIS, LH	18
6	6	MS51959-43	SCREW, MACH.-FLAT CSK HD	17
2	2	1014255-2	BRACKET ASSY	16
1	1	2014379	BRACKET, PIVOT, LH	15
1	1	2014332	BRACKET, PIVOT, RH	14
1	1	2014335	BRACKET, SWITCH SUPPORT	13
1	1	2014373	HARNESS SUPPORT, LH	12
1	1	2014357	HARNESS SUPPORT, RH	11
2	2	2014356	BAR, SUPPORT	10
1	1	2014330	BRACKET, AMPLIFIER	9
1	1	2014292-011	COMPONENT BOARD ASSY A5	8
–	1	2014294-011	COMPONENT BOARD ASSY A4	7
1	1	2014296-011	COMPONENT BOARD ASSY A3	6
1	1	2014290-011	COMPONENT BOARD ASSY A2	5
1	1	2014334-011	POT. BRKT ASSY A1	4
1	1	2014386	AMPLIFIER, MODIFICATION	3
1	1	2014314	CHASSIS	2
–	1	2014327-011	FRONT PANEL ASSEMBLY	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLE ±
DO NOT SCALE DRAWING
MATERIAL

NEXT ASSY	USED ON
2014042	

APPLICATION

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-4?7
DRAWN [illegible] DATE 15 JUL 65
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

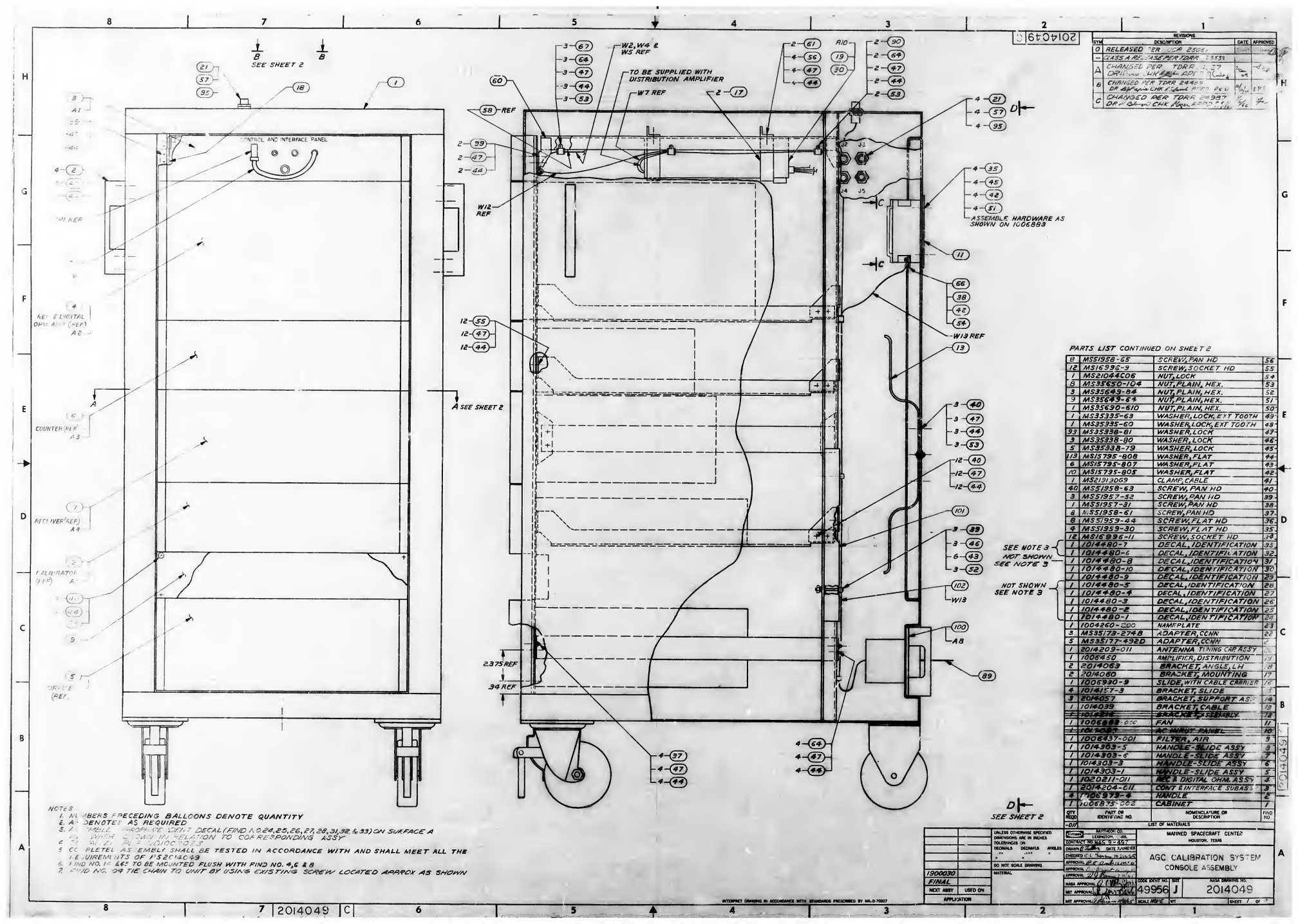
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RDC INTERFACE ASSY
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014045
SCALE 1/2 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014045 L



2014049 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER ECR 8501		
–	CLASS A RELEASE PER TDRR 23531		
A	CHANGED PER TDRR 24227 DR CHK ECP		
B	CHANGED PER TDRR 24989 DR CHK ECP		
C	CHANGED PER TDRR 28987 DR CHK ECP		

PARTS LIST CONTINUED ON SHEET 2

QTY PER ASSY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
8	MS51958-65	SCREW, PAN HD	56
12	MS16996-9	SCREW, SOCKET HD	55
1	MS21044C06	NUT, LOCK	54
8	MS35650-104	NUT, PLAIN, HEX.	53
3	MS35649-84	NUT, PLAIN, HEX.	52
9	MS35649-64	NUT, PLAIN, HEX.	51
1	MS35650-610	NUT, PLAIN, HEX.	50
1	MS35335-63	WASHER, LOCK, EXT TOOTH	49
1	MS35335-60	WASHER, LOCK, EXT TOOTH	48
93	MS35338-81	WASHER, LOCK	47
3	MS35338-80	WASHER, LOCK	46
5	MS35338-79	WASHER, LOCK	45
13	MS15795-808	WASHER, FLAT	44
6	MS15795-807	WASHER, FLAT	43
10	MS15795-805	WASHER, FLAT	42
1	MS21913D69	CLAMP, CABLE	41
40	MS51958-63	SCREW, PAN HD	40
3	MS51957-32	SCREW, PAN HD	39
1	MS51957-31	SCREW, PAN HD	38
6	MS51958-61	SCREW, PAN HD	37
8	MS51959-44	SCREW, FLAT HD	36
4	MS51959-30	SCREW, FLAT HD	35
12	MS16996-11	SCREW, SOCKET HD	34
1	1014480-7	DECAL, IDENTIFICATION	33
1	1014480-6	DECAL, IDENTIFICATION	32
1	1014480-8	DECAL, IDENTIFICATION	31
1	1014480-10	DECAL, IDENTIFICATION	30
1	1014480-9	DECAL, IDENTIFICATION	29
1	1014480-5	DECAL, IDENTIFICATION	28
1	1014480-4	DECAL, IDENTIFICATION	27
1	1014480-3	DECAL, IDENTIFICATION	26
1	1014480-2	DECAL, IDENTIFICATION	25
1	1014480-1	DECAL, IDENTIFICATION	24
1	1004260-200	NAMEPLATE	23
3	MS35173-2748	ADAPTER, CONN	22
5	MS35177-492D	ADAPTER, CONN	21
1	2014209-011	ANTENNA TIMING CAP ASSY	20
1	1006420	AMPLIFIER, DISTRIBUTION	19
2	2014063	BRACKET, ANGLE, LH	18
2	2014060	BRACKET, MOUNTING	17
1	1006930-3	SLIDE, WITH CABLE CARRIER	16
4	1014157-3	BRACKET, SLIDE	15
3	2014057	BRACKET, SUPPORT ASS	14
1	1014039	BRACKET, CABLE	13
~~1~~	~~1014215~~	~~BRACKET ASSEMBLY~~	12
1	1006888-800	FAN	11
~~1~~	~~1014235~~	~~MOUNT PANEL~~	10
1	1006437-001	FILTER, AIR	9
1	1014303-5	HANDLE-SLIDE ASSY	8
1	1014303-6	HANDLE-SLIDE ASSY	7
1	1014303-3	HANDLE-SLIDE ASSY	6
1	1014303-1	HANDLE-SLIDE ASSY	5
1	1020211-011	REC & DIGITAL OHM. ASSY	4
1	2014204-611	CONT & INTERFACE SUBASS	3
4	1006973-4	HANDLE	2
1	1006875-002	CABINET	1
-011		LIST OF MATERIALS	

NOTES:
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. AR DENOTES AS REQUIRED
3. ASSEMBLE PROPRIETARY DECAL (FIND NO. 24, 25, 26, 27, 28, 29, 31, 32, & 33) ON SURFACE A
4. FOR OUTLINE SHOWN IN RELATION TO COMPONENTS ASSY
5. COMPLETELY ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL THE REQUIREMENTS OF PS2014C49
6. FIND NO. 16 TO BE MOUNTED FLUSH WITH FIND NO. 4, 5 & 8
7. FIND NO. 09 TIE CHAIN TO UNIT BY USING EXISTING SCREW LOCATED APPROX AS SHOWN

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONALS ±1/64 DECIMALS .XX ±.03 .XXX ±.010 ANGLES ±1°
DO NOT SCALE DRAWING
MATERIAL
19000030
FINAL
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE JUNE 65
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

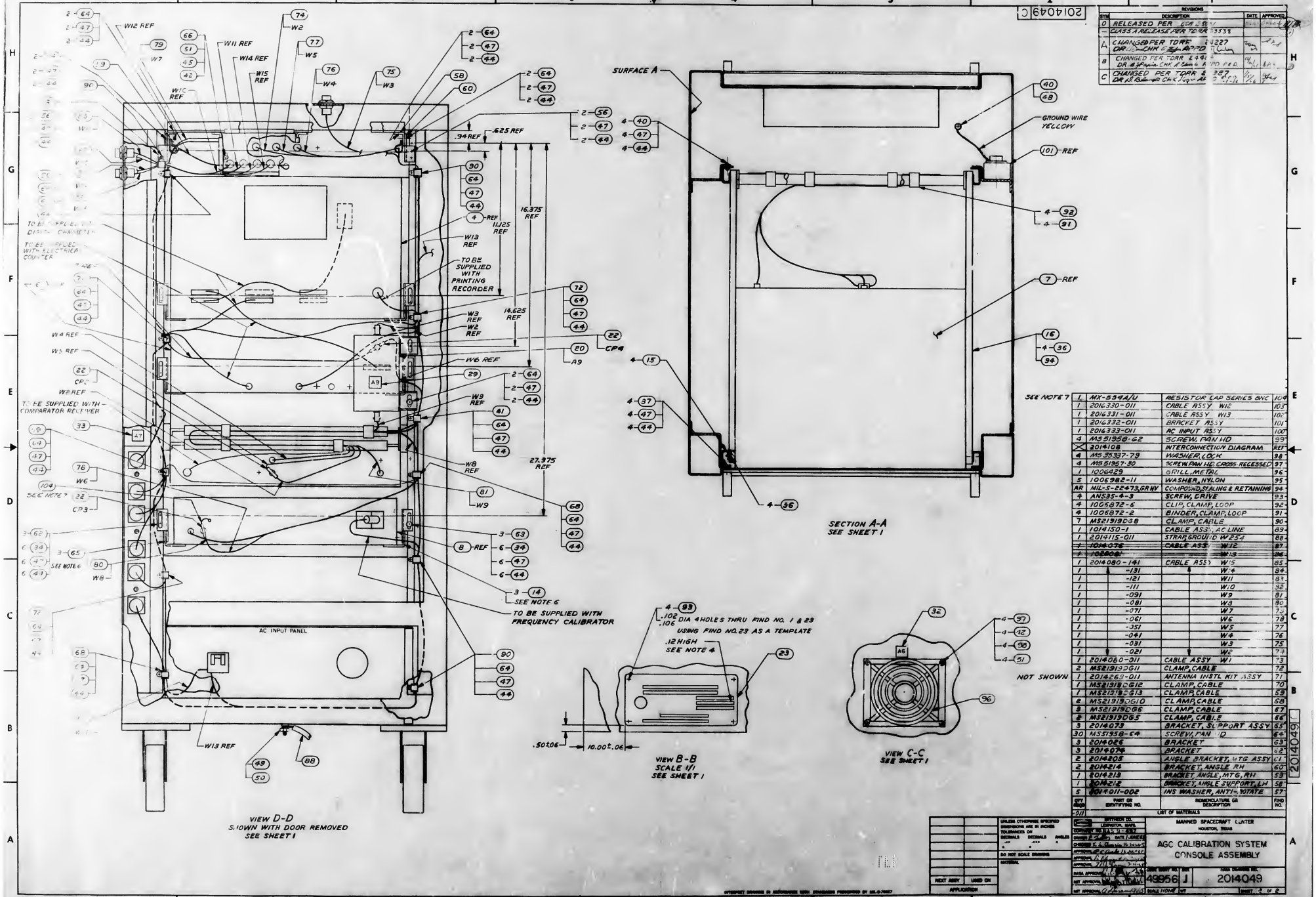
MANNED SPACECRAFT CENTER HOUSTON, TEXAS

AGC CALIBRATION SYSTEM
CONSOLE ASSEMBLY

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014049
SCALE NONE | WT. | SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014049 C



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER [illegible]	[illegible]	[illegible]
–	CLASS A RELEASE PER TDR [illegible]	[illegible]	[illegible]
A	CHANGED PER TDR [illegible] DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
B	CHANGED PER TDR E 4981 DR [illegible] CHK [illegible] APPD [illegible]	14/11	[illegible]
C	CHANGED PER TDR E [illegible] DR [illegible] CHK [illegible]	1/11/66	[illegible]

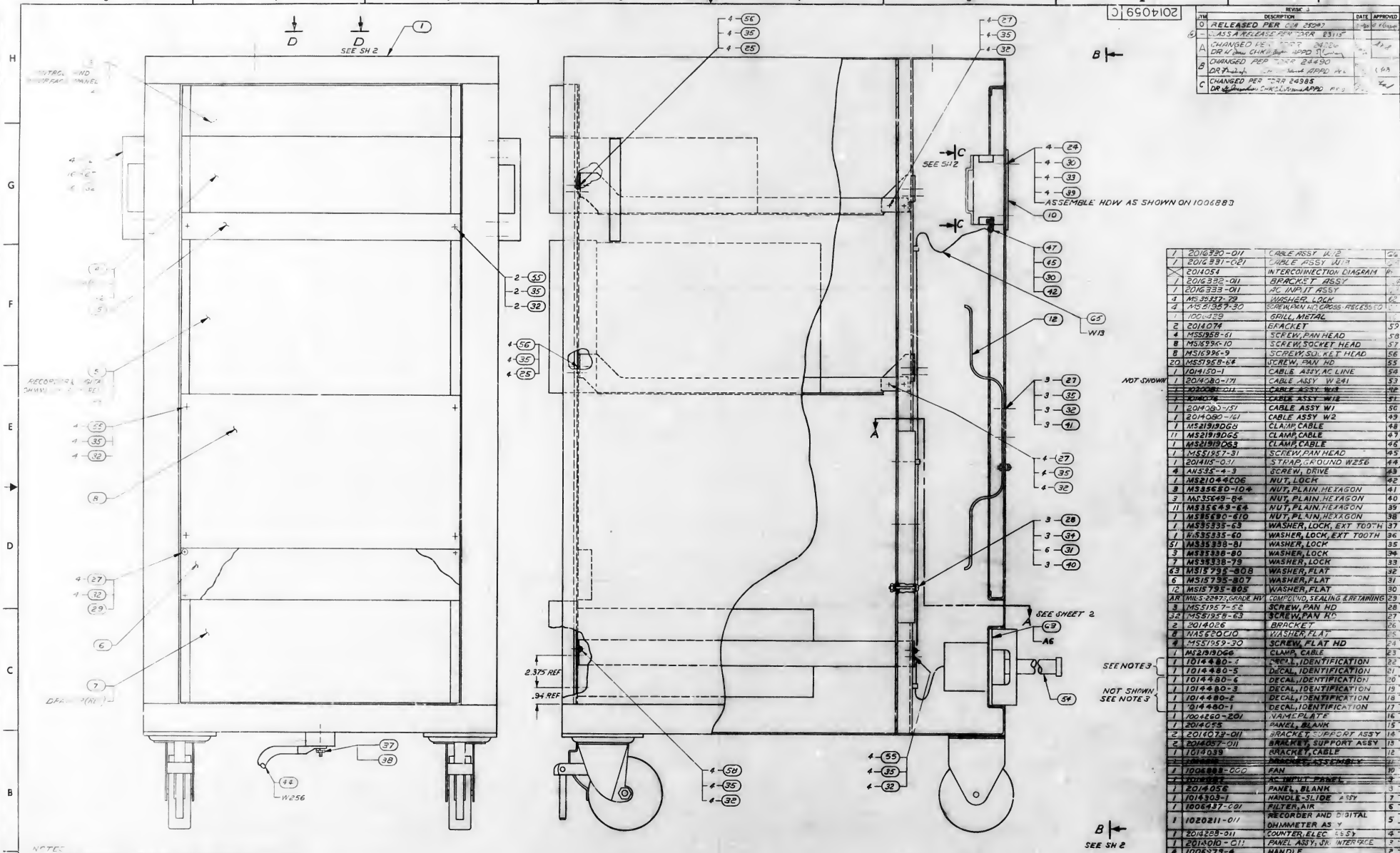
SEE NOTE 7				
1	MX-5594A/U	RESISTOR, CAP. SERIES ENC		104
1	2016330-011	CABLE ASSY	W12	103
1	2016331-011	CABLE ASSY	W13	102
1	2016332-011	BRACKET ASSY		101
1	2016333-011	AC INPUT ASSY		100
4	MS51958-62	SCREW, PAN HD		99
X	2014108	INTERCONNECTION DIAGRAM		REF
4	MS35337-79	WASHER, LOCK		98
4	MS51957-30	SCREW, PAN HD, CROSS RECESSED		97
1	1006629	GRILL, METAL		96
5	1006982-11	WASHER, NYLON		95
AR	MIL-S-22473, GRHV	COMPOUND, SEALING & RETAINING		94
4	AN535-4-3	SCREW, DRIVE		93
4	1006872-6	CLIP, CLAMP, LOOP		92
4	1006872-2	BINDER, CLAMP, LOOP		91
7	MS21919DG8	CLAMP, CABLE		90
1	1014150-1	CABLE ASSY, AC LINE		89
1	2014115-011	STRAP, GROUND	W23	88
1	1014075	CABLE ASSY	W22	87
1	1028068	[illegible]	W18	86
1	2014080-141	CABLE ASSY	W15	85
1	-131		W14	84
1	-121		W11	83
1	-111		W10	82
1	-091		W9	81
1	-081		W8	80
1	-071		W7	79
1	-061		W6	78
1	-051		W5	77
1	-041		W4	76
1	-031		W3	75
1	-021		W2	74
1	2014080-011	CABLE ASSY	W1	73
2	MS21919DG11	CLAMP, CABLE		72
1	2014269-011	ANTENNA INSTL KIT ASSY		71
1	MS21919DG12	CLAMP, CABLE		70
1	MS21919DG13	CLAMP, CABLE		69
2	MS21919DG10	CLAMP, CABLE		68
8	MS21919DG6	CLAMP, CABLE		67
2	MS21919DG5	CLAMP, CABLE		66
3	2014073	BRACKET, SUPPORT ASSY		65
30	MS51958-64	SCREW, PAN HD		64
3	2014026	BRACKET		63
3	2014074	BRACKET		62
2	2014208	ANGLE, BRACKET, MTG ASSY		61
2	2014214	BRACKET, ANGLE, RH		60
1	2014213	BRACKET, ANGLE, MTG, RH		59
1	2014212	BRACKET, ANGLE SUPPORT, LH		58
5	2014011-002	INS WASHER, ANTI-ROTATE		57
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION		FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: FRACTIONS ±, DECIMALS .xx ±, .xxx ±, ANGLES ±°	RAYTHEON CO. LEXINGTON, MASS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE DRAWING	CONTRACT NO. NAS9-153	AGC CALIBRATION SYSTEM CONSOLE ASSEMBLY	
MATERIAL	DRAWN R. A. Gallo DATE 1/APR/66		
NEXT ASSY	USED ON	CHECKED K. L. Gamache	
APPLICATION	APPROVED [illegible]		
	APPROVED [illegible]		
	APPROVED [illegible]		
	MFG APPROVAL [illegible]	CAGE SHEET NO. 49956 J	FSCM NO. 2014049
	QUAL APPROVAL [illegible]	SCALE NONE WT	SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014049 C



ITM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CR# 35047		
	CLASS A RELEASE PER TDRR 83115		
A	CHANGED PER TDRR 24006 DR # CHK APPD		
B	CHANGED PER TDRR 24490 DR # CHK APPD		
C	CHANGED PER TDRR 24985 DR # CHK APPD		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	2016320-011	CABLE ASSY W2	60
1	2016331-021	CABLE ASSY W3	59
X	2014054	INTERCONNECTION DIAGRAM	58
1	2016332-011	BRACKET ASSY	57
1	2016333-011	AC INPUT ASSY	56
4	MS35337-79	WASHER, LOCK	55
4	MS51957-30	SCREW, PAN HD W/CROSS RECESS	54
1	1001439	GRILL, METAL	53
2	2014074	BRACKET	52
4	MS51958-61	SCREW, PAN HEAD	51
8	MS16996-10	SCREW, SOCKET HEAD	50
8	MS16996-9	SCREW, SOCKET HEAD	49
20	MS27958-64	SCREW, PAN HD	48
1	1014150-1	CABLE ASSY, AC LINE	47
1	2014080-171	CABLE ASSY W241	46
NOT SHOWN	1020081-011	CABLE ASSY W13	45
	1020078	CABLE ASSY W18	44
1	2014080-151	CABLE ASSY W1	43
1	2014080-161	CABLE ASSY W2	42
1	MS21913DG8	CLAMP, CABLE	41
11	MS21913DG5	CLAMP, CABLE	40
1	MS21913DG3	CLAMP, CABLE	39
1	MS51957-31	SCREW, PAN HEAD	38
1	2014115-031	STRAP, GROUND W256	37
4	AN535-4-3	SCREW, DRIVE	36
1	MS21044C06	NUT, LOCK	35
3	MS35650-104	NUT, PLAIN, HEXAGON	34
3	MS35649-84	NUT, PLAIN, HEXAGON	33
11	MS35643-64	NUT, PLAIN, HEXAGON	32
1	MS35690-610	NUT, PLAIN, HEXAGON	31
1	MS35335-63	WASHER, LOCK, EXT TOOTH	30
1	MS35335-60	WASHER, LOCK, EXT TOOTH	29
51	MS35338-81	WASHER, LOCK	28
3	MS35338-80	WASHER, LOCK	27
7	MS35338-79	WASHER, LOCK	26
63	MS15795-808	WASHER, FLAT	25
6	MS15795-807	WASHER, FLAT	24
12	MS15795-805	WASHER, FLAT	23
AR	MIL-S-22473, GRADE MV	COMPOUND, SEALING & RETAINING	22
3	MS51957-52	SCREW, PAN HD	21
32	MS51958-63	SCREW, PAN HD	20
2	2014026	BRACKET	19
8	NAS620C10	WASHER, FLAT	18
4	MS51959-30	SCREW, FLAT HD	17
1	MS21913DG6	CLAMP, CABLE	16
SEE NOTE 3	1014480-4	DECAL, IDENTIFICATION	15
	1014480-5	DECAL, IDENTIFICATION	14
	1014480-6	DECAL, IDENTIFICATION	13
NOT SHOWN SEE NOTE 3	1014480-3	DECAL, IDENTIFICATION	12
	1014480-2	DECAL, IDENTIFICATION	11
	1014480-1	DECAL, IDENTIFICATION	10
1	1004260-201	NAMEPLATE	9
1	2014055	PANEL, BLANK	8
2	2014073-011	BRACKET, SUPPORT ASSY	7
2	2014057-011	BRACKET, SUPPORT ASSY	6
1	1014039	BRACKET, CABLE	5
		BRACKET ASSEMBLY	4
1	1006883-000	FAN	3
1	2016334	AC INPUT PANEL	2
1	2014056	PANEL, BLANK	1
1	1014303-1	HANDLE-SLIDE ASSY	7
1	1006437-001	FILTER, AIR	6
1	1020211-011	RECORDER AND DIGITAL DIAMETER ASSY	5
1	2014228-011	COUNTER, ELEC ASSY	4
1	2014010-011	PANEL ASSY, JR INTERFACE	3
4	1006379-4	HANDLE	2
1	1005875-001	CABINET	1

LIST OF MATERIALS

NOTES:
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. AR DENOTES AS REQUIRED
3. ASSEMBLE APPROPRIATE IDENT DECAL (FIND NO. 17, 18, 19, 20, 21 & 22) ON SURFACE A AND WHERE SHOWN IN RELATION TO CORRESPONDING ASSY
4. [illegible] PER [illegible]
5. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH [illegible] SHALL MEET ALL THE REQUIREMENTS OF PS2014059
FIND NO. 13 & 14 TO BE MOUNTED FLUSH WITH FIND NO. 4 & 5

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX ±.03 .XXX ±.010 ANGLES ±1°
DO NOT SCALE DRAWING
MATERIAL
FINISH
NEXT ASSY | USED ON
APPLICATION

RAYTHEON COMPANY, LEXINGTON, MASS.
CONTRACT NO. NAS9-2[illegible]
DRAWN [illegible] DATE 4/19/65
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AUXILIARY
AGC CALIBRATION SYSTEM
CONSOLE ASSEMBLY

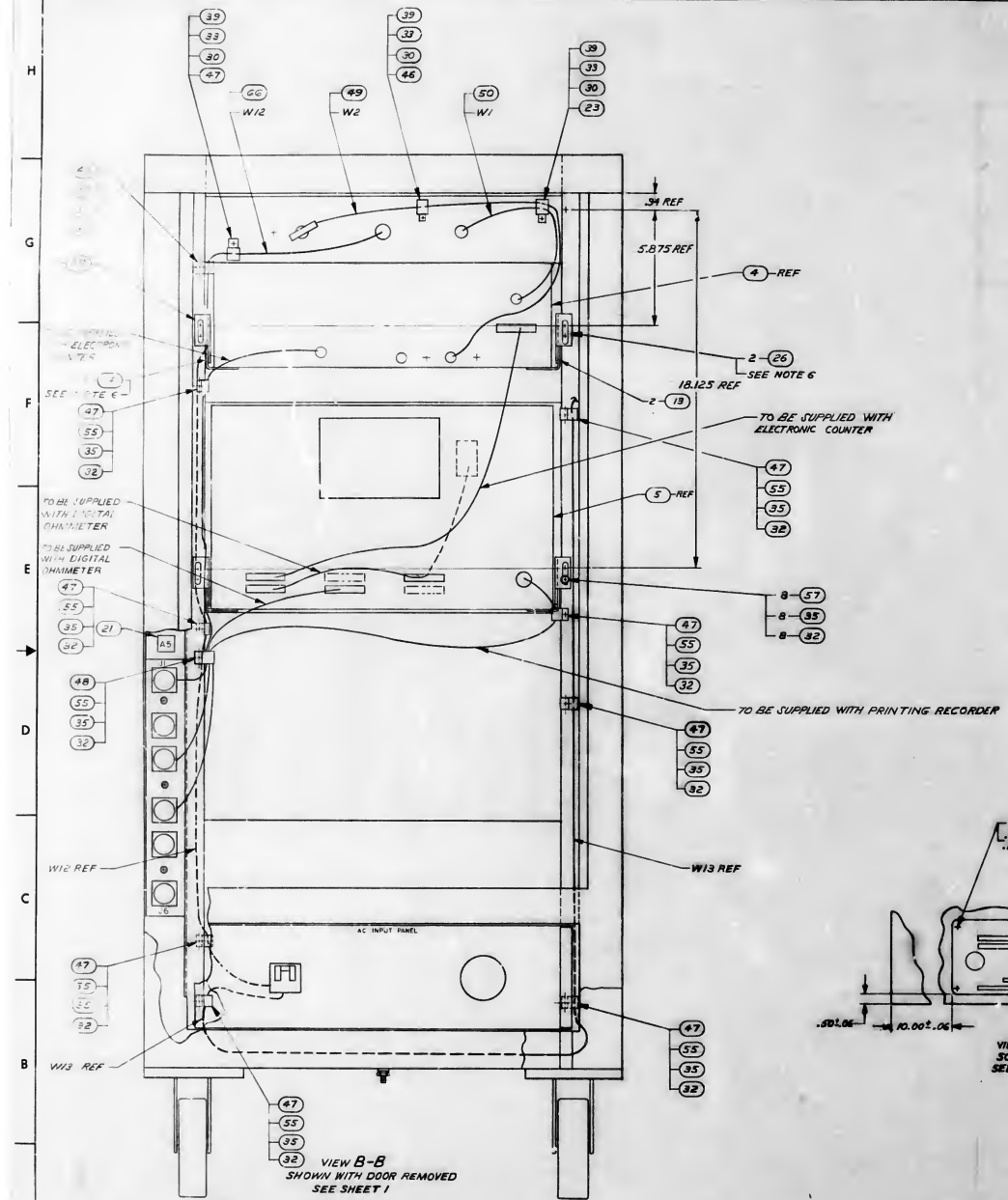
CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014059
SCALE 1/2 | WT | SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

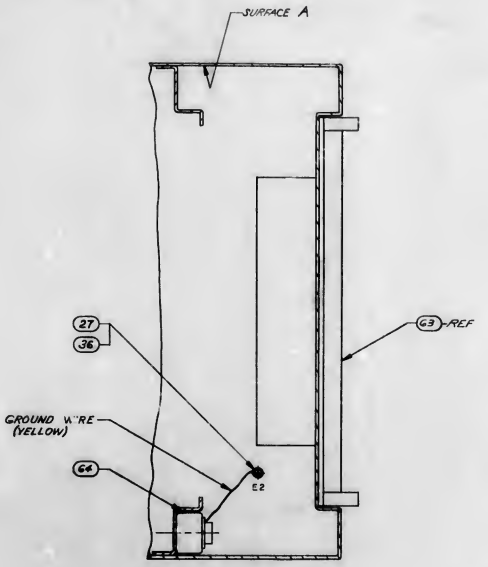
2014059 C

2014059 C

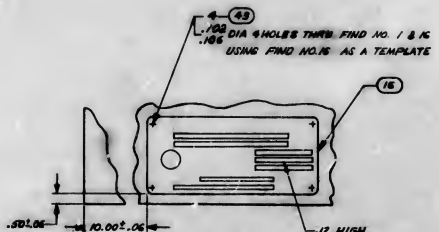
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER [illegible] 23049	[illegible]	[illegible]
—	CLASS A RELEASE PER TDRR 23115	[illegible]	[illegible]
A	CHANGED PER TDRR 24226 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
B	CHANGED PER TDRR 24490 DR [illegible] CHK [illegible] APPROVED	[illegible]	[illegible]
C	CHANGED PER TDRR 24985 DR [illegible] CHK [illegible] APPROVED	[illegible]	[illegible]



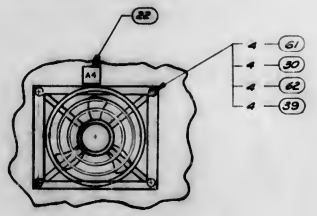
VIEW B-B
SHOWN WITH DOOR REMOVED
SEE SHEET 1



SECTION A-A
SEE SHEET 1



VIEW D-D
SCALE 1/1
SEE SHEET 1



VIEW C-C
SEE SHEET 1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-[illegible]
DRAWN [illegible] DATE [illegible]
CHECKED [illegible]
ENGINEER [illegible]
APPROVED [illegible]
DATE APPROVED [illegible]
SET APPROVED [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

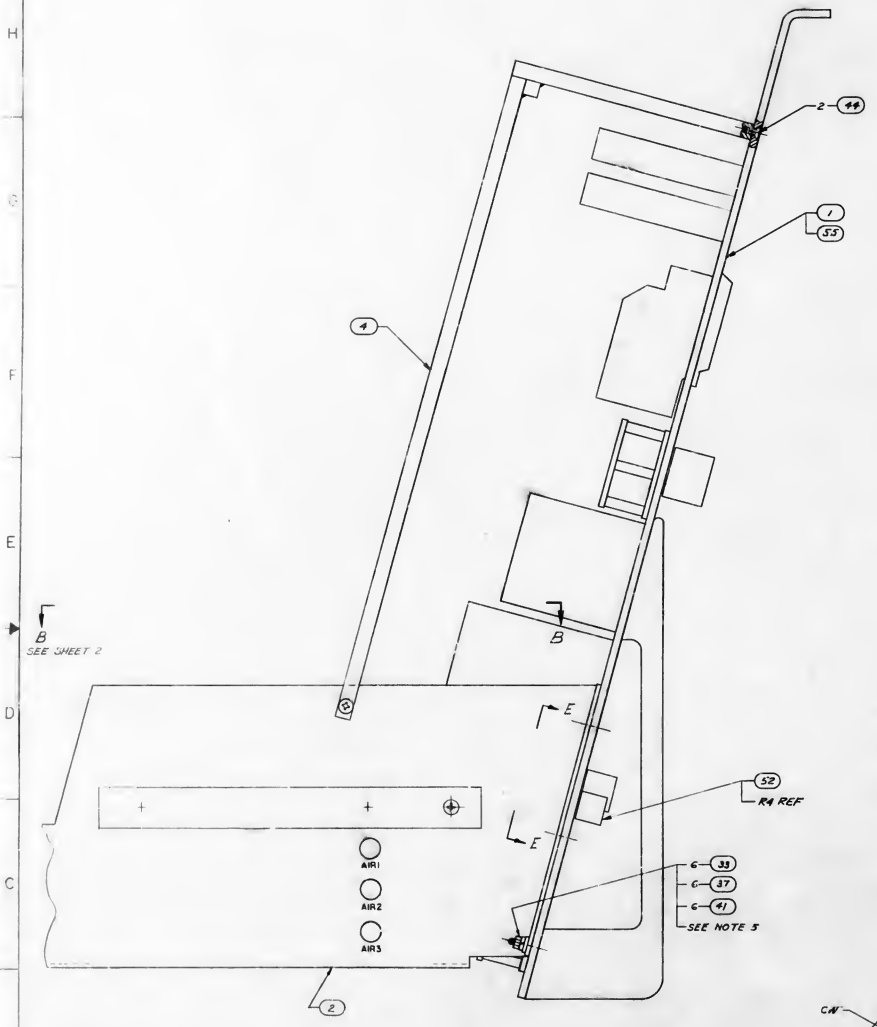
AUXILIARY
AGC CALIBRATION SYSTEM
CONSOLE ASSEMBLY

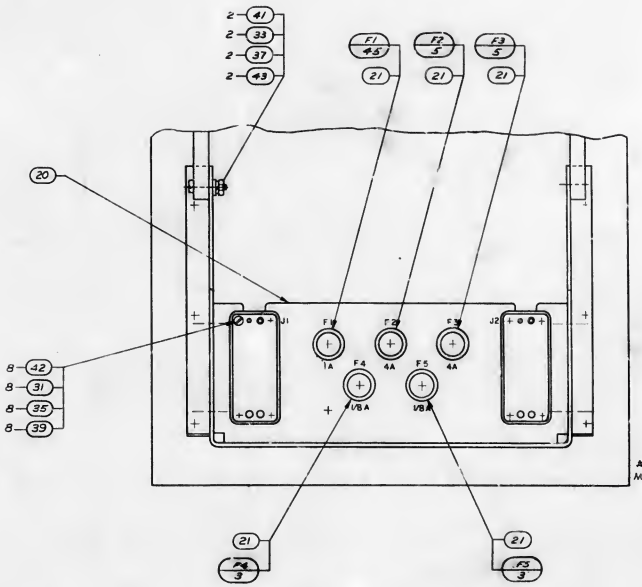
WORK ORDER NO. 149956 | DWG NO. J 2014059

SCALE 1/2 | SHEET 2 OF 2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCE IS ON DECIMALS ANGLES
.xx ± .xxx ± °
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON | APPLICATION

INSPECT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

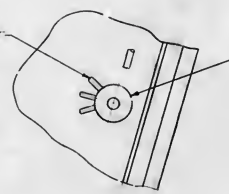




VIEW A-A
SEE SHEET 2
VIEW SHOWN WITH FIND NO. 7 & 8 REMOVED

COND IDENT	FROM	TO	COLOR	AWG	FIND NO.	REMARKS
C1	TB1-A12	TB1-A11	WHT	22	47	SEE NOTE 10
C2	TB1-A11	TB1-A10				
C3	TB1-A07	TB1-A9				
C4	TB1-A9	TB1-A8				
C5	TB2-B12	TB2-B11				
C6	TB2-B11	TB2-B10				
C7	TB2-B10	TB2-B9				
C8	TB2-B7	TB2-B6				
C9	TB2-A6	TB2-A5	WHT	22	47	SEE NOTE 10

JUMPER CHART



SECTION E-E

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. FABRICATE PER ND1002032
3. SOLDER PER ND1002071
4. ~~02-W-343, TYPE S SOFT COATED (2) AWG SIZE 22~~
5. MAXIMUM TORQUE TO BE 18 INCH POUNDS
6. BOND FIND NO.22 OR FIND NO. 36 TO FIND NO. 2 USING FIND NO. 28
7. AR DENOTES AS REQUIRED
8. SERIALIZE PER ND1002023
9. CRIMP PER ND 1002206
10. STRIP EACH END OF CONDUCTOR .16 ± .03 & ASSEMBLE FIND 49
11. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS PREFIX WITH SUB-ASSEMBLY DESIGNATIONS
12. CUT FIND 51 TO .50 LENGTH, 6 PCS, INSTALL OVER TERMINALS AFTER WIRING
13. R4 (1006927) IS SUPPLIED AS PART OF FIND 19

SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 23726	3/29/65	
1	CHANGED PER CCA 24892 DR REL CHK MH APPD	11/1/65	
–	CLASS B CHANGED PER CCA 25309	4/1/66	
A	CHANGED PER CCA 25645 DR REL CHK APPD	5/26/66	
B	CHANGED PER CCA 25663 DR REL CHK APPD	6/21/66	
C	CHANGED PER CCA 27108 DR REL CHK APPD	1/16/67	
D	CHANGED PER CCA 27439 AND CLASS A RELEASED PER TDRR 28476	5/1/67	
E	CHANGED PER TDRR 28656 DR REL CHK APPD	9/14/67	
F	CHANGED PER TDRR 28 DRGS CHK APPD	11/16/67	

QTY REQD	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	REF DES
		2016394	SCHEMATIC	REF
		2016413-011	WIRING HARNESS	REF
1	1	1004260-266	NAMEPLATE	56
1	–	2014297-021	FRONT PANEL ASSY	53
1	1	MS21322-38	CLAMP, LOOP	54
–	X	2014188-011	WIRING HARNESS	REF
–	X	2014156	SCHEMATIC	REF
1	1	MS21919DG6	CLAMP, LOOP	55
1	1	MS91528-1E23	KNOB, CONTROL, POINTER	58
0.3	0.3	1006759-8	INSULATION, SLEEVING	57
–	X	~~2016189~~	~~CORD ELECTRICAL~~	REF
AR	AR	1006459-003	TAPE, LACING	50
18	18	MS17143-19	TERMINAL LUG	43
NOT SHOWN	~~43~~	~~SEE NOTE 6~~	~~WIRE, ELECTRICAL~~	~~REF~~
NOT SHOWN	2.0	2.0 MIL-W-16878/4 BE2	WIRE, ELECTRICAL (WHT)	47
2	2	MS35431-4	TERMINAL, LUG	46
1	1	F02A250V1A	FUSE (MIL-F-15160/02)	48
2	2	MS51959-45	SCREW, FLAT HD	44
2	2	MS51957-47	SCREW, PAN HD	42
8	8	MS35275-18	SCREW, FIL HD	41
16	16	MS35649-84	NUT, HEX	40
18	18	MS51649-64	NUT, HEX	39
6	6	MS35649-44	NUT, HEX	38
4	4	MS51957-29	SCREW, PAN HD	18
20	20	MS15795-807	WASHER, FLAT	37
28	28	MS15795-805	WASHER, FLAT	36
28	28	MS15795-803	WASHER, FLAT	35
2	2	MS51957-36	SCREW, PAN HD	34
20	20	MS35338-80	WASHER, LOCK	33
28	28	MS35338-79	WASHER, LOCK	32
28	28	MS35338-78	WASHER, LOCK	31
6	6	MS51959-46	SCREW, FH	30
6	6	NAS24693-28	SCREW, FH	29
AR	AR	MIL-A-5092 TYPE II	CEMENT	28
6	6	MS51957-45	SCREW, PAN HD	27
10	10	MS51957-30	SCREW, PAN HD	26
10	10	MS51957-12	SCREW, PAN HD	25
5	5	1006948	SOCKET, RELAY	24
1	1	1006652	FLASHER, ELECTRONIC	23
–	1	1004260-237	NAMEPLATE	22
5	5	MS24572-1	FUSEHOLDER	21
1	1	2014245	CHASSIS, REAR	20
1	1	1006489-001	AMPLIFIER UNIT, DIGITAL	19
5	5	1006947-000	RELAY, ARMATURE	16
1	1	1015982-001	RELAY, ARMATURE	17
1	1	2014270	BRACKET, RELAY MTG	14
2	2	MC-7-16784/6TB12	BOARD, TERM.	15
4	4	MS51957-31	SCREW, PAN HD	13
10	10	1019085	STUD, SPACER	12
2	2	2014276	BRACKET, TERM. BOARD	10
1	1	2014236-011	BOARD, TERM. ASSY A1	11
–	~~1~~	~~MC9665-3~~	~~SLIDE, CHASSIS~~	~~REF~~
–	~~1~~	~~1006665-4~~	~~SLIDE, CHASSIS~~	~~REF~~
1	1	1006665-1	SLIDE, CHASSIS	8
1	1	1006665-2	SLIDE, CHASSIS	9
1	1	2014015	COVER, DIGITAL AMPLIFIER	6
2	2	F02A250V4A	FUSE (MIL-F-15160/02)	5
1	1	2014246	SUPPORT BRKT	4
2	2	F02A250V 1/8A	FUSE (MIL-F-15160/02)	3
1	1	2014283	CHASSIS	2
1	1	2014197-011	FRONT PANEL ASSY	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

2014024			
NEXT ASSY	USED ON		
APPLICATION			

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 5 APR 67
CHECKED DATE 5 APR 67
APPROVED DATE 5 APR 67
APPROVAL
APPROVAL
NASA APPROVAL DATE
NASA APPROVAL DATE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ANGLES
.x ±
.xx ±
.xxx ±
DO NOT SCALE DRAWING
MATERIAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER CONTROL ASSY OPERATION CONSOLE

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014079
SCALE 1/1 | WT | SHEET OF 2

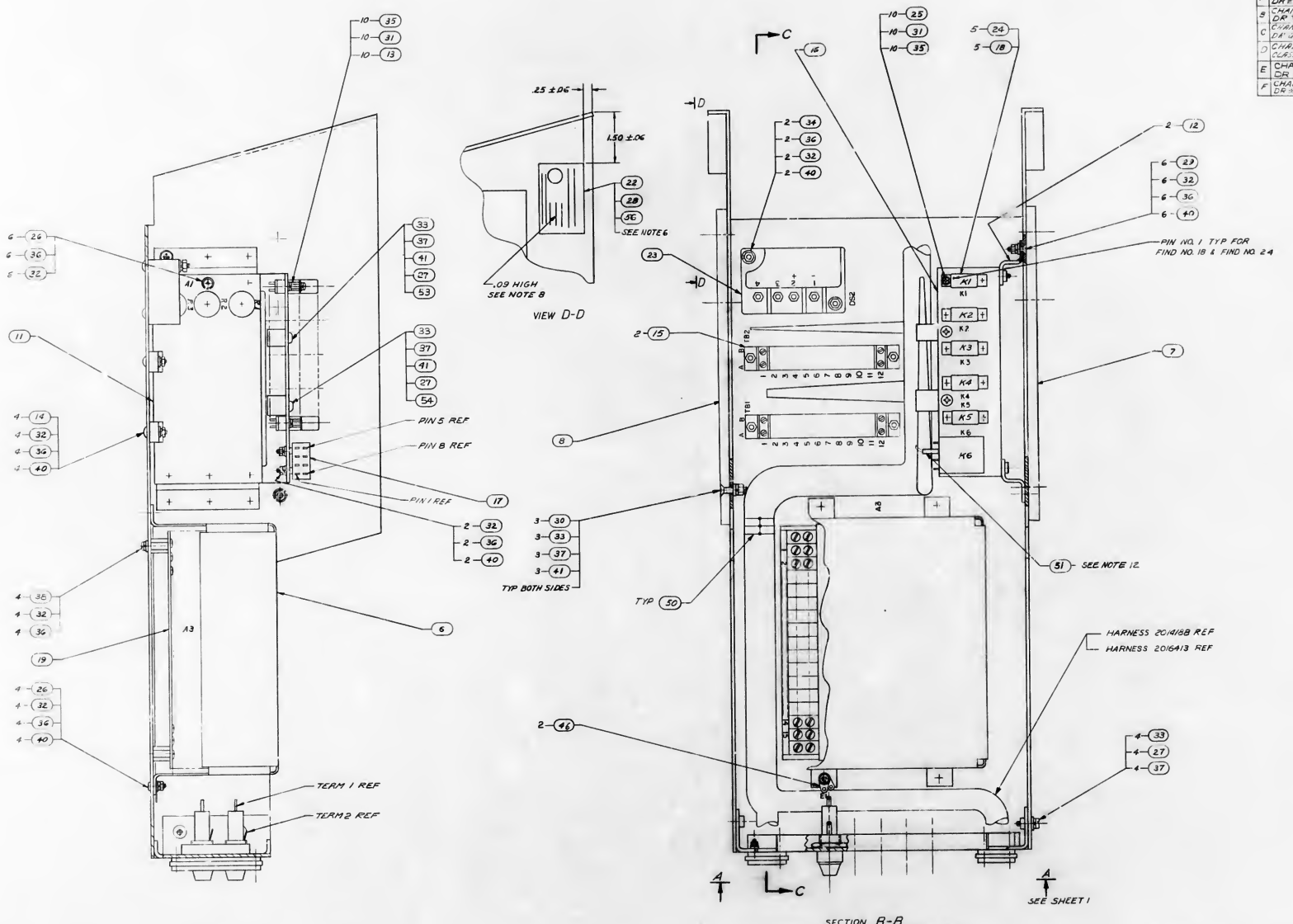
2014079 F

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014079-1

F 2014075

SYM	DESCRIPTION	DATE	APPROVED
D	RELEASED PER RD 2-24-25-038		
1	CHANGED PER CCA R25032 CR [illegible] CHK [illegible] APPD PID		
–	CLASS B CHANGE PER CCA R25529		
A	CHANGED PER CCA R25635 DR [illegible] CHK [illegible] APPD		
B	CHANGED PER CCA R25665 DR [illegible] CHK [illegible] APPD		
C	CHANGED PER CCA [illegible] DR [illegible] CHK [illegible] APPD		
D	CHANGED PER CCA R [illegible] DR [illegible] CHK [illegible] APPD		
E	CHANGED PER TDRR 2646 DR [illegible] CHK [illegible] APPD		
F	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD		



QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-4477
DRAWN [illegible] DATE 1 Mar 65
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

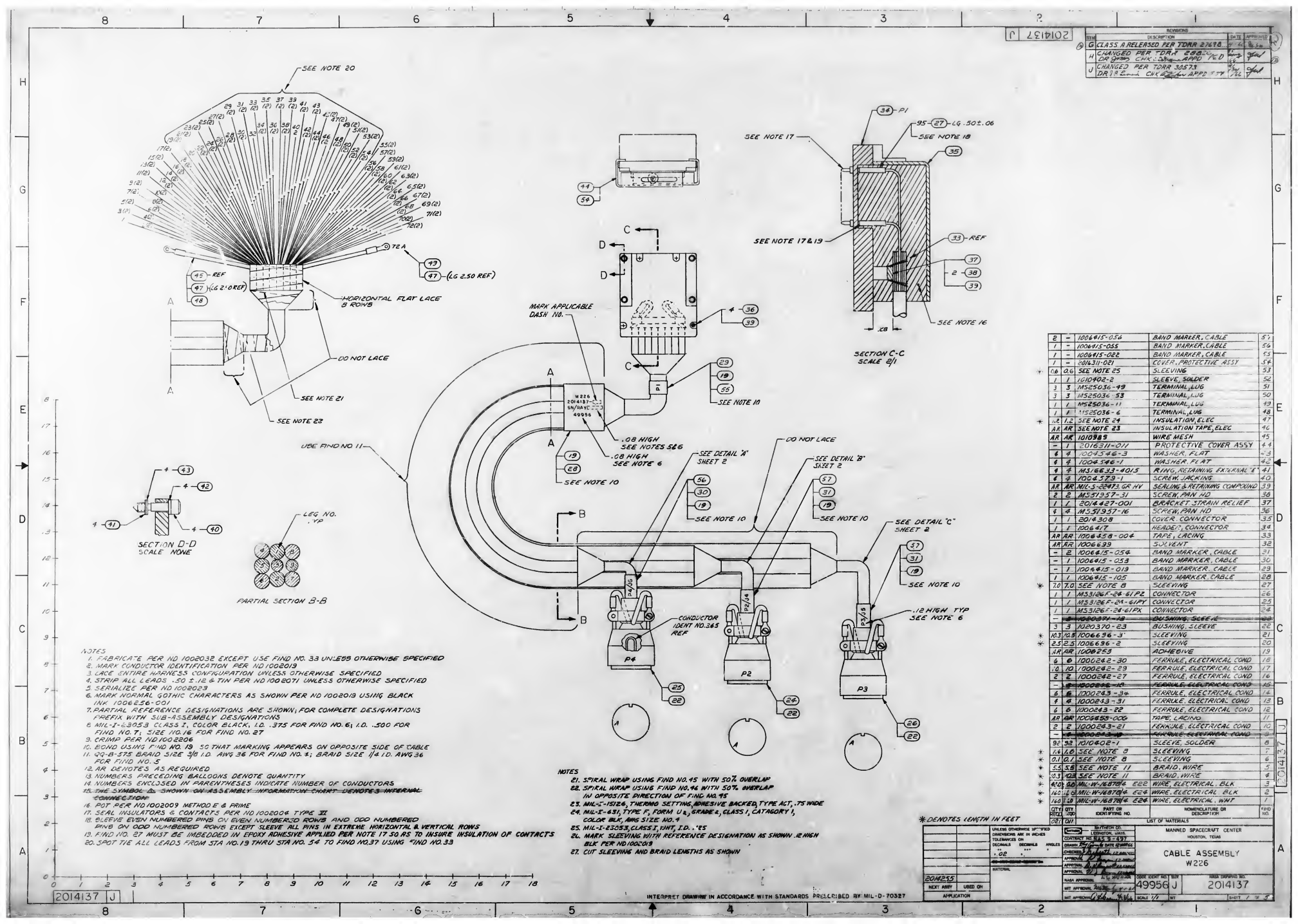
POWER CONTROL AS 1
OPERATION CONSOLE

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014075
SCALE 1/2 1 | WT | SHEET OF

UNLESS OTHERWISE SPECIFIED DIM. ARE IN INCHES TOLERANCES ON DECIMALS .XX ± .01 .XXX ± .005 ANGLES ± 1°
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014075 F



REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
G	CLASS A RELEASED PER TDRR 27698		
H	CHANGED PER TDRR 28866 DR [illegible] CHK [illegible] APPD		
J	CHANGED PER TDRR 30573 DR [illegible] CHK [illegible] APPD		

QTY REQ	QTY MOD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			LIST OF MATERIALS	
2	-	1006415-056	BAND MARKER, CABLE	57
1	-	1006415-055	BAND MARKER, CABLE	56
1	-	1006415-022	BAND MARKER, CABLE	55
1	-	2014311-021	COVER, PROTECTIVE ASSY	54
.06	0.6	SEE NOTE 25	SLEEVING	53
1	1	1010402-2	SLEEVE, SOLDER	52
3	3	MS25036-99	TERMINAL, LUG	51
3	3	MS25036-53	TERMINAL, LUG	50
1	1	MS25036-11	TERMINAL, LUG	49
1	1	11525036-6	TERMINAL, LUG	48
1.2	1.2	SEE NOTE 24	INSULATION, ELEC	47
AR	AR	SEE NOTE 23	INSULATION TAPE, ELEC	46
AR	AR	1010983	WIRE MESH	45
-	1	2016311-011	PROTECTIVE COVER ASSY	44
6	4	1004546-3	WASHER, FLAT	43
6	4	1004546-1	WASHER, FLAT	42
4	4	MS16633-4015	RING, RETAINING EXTERNAL "E"	41
6	4	1004579-1	SCREW, JACKING	40
AR	AR	MIL-S-22473, GR HV	SEALING & RETAINING COMPOUND	39
2	2	MS51957-31	SCREW, PAN HD	38
1	1	2014427-001	BRACKET, STRAIN RELIEF	37
6	4	MS51957-16	SCREW, PAN HD	36
1	1	2014308	COVER, CONNECTOR	35
1	1	1006417	HEADER, CONNECTOR	34
AR	AR	1006458-004	TAPE, LACING	33
AR	AR	1006699	SOLVENT	32
-	2	1006415-054	BAND MARKER, CABLE	31
-	1	1006415-053	BAND MARKER, CABLE	30
-	1	1006415-013	BAND MARKER, CABLE	29
1	1	1006415-105	BAND MARKER, CABLE	28
7.0	7.0	SEE NOTE 8	SLEEVING	27
1	1	MS3126F-28-61PZ	CONNECTOR	26
1	1	MS3126F-24-61PY	CONNECTOR	25
1	1	MS3126F-24-61PX	CONNECTOR	24
-	~~1~~	~~10080371-13~~	~~BUSHING, SLEEVE~~	~~23~~
3	3	10203370-23	BUSHING, SLEEVE	22
10.3	10.3	1006696-3	SLEEVING	21
2.5	2.5	1006696-2	SLEEVING	20
AR	AR	1008259	ADHESIVE	19
6	6	1000282-30	FERRULE, ELECTRICAL COND	18
10	10	1000282-29	FERRULE, ELECTRICAL COND	17
2	2	1000282-27	FERRULE, ELECTRICAL COND	16
-	~~6~~	~~1000282-26~~	~~FERRULE, ELECTRICAL COND~~	~~15~~
6	6	1000243-34	FERRULE, ELECTRICAL COND	14
8	8	1000243-31	FERRULE, ELECTRICAL COND	13
6	6	1000243-22	FERRULE, ELECTRICAL COND	12
AR	AR	1006455-006	TAPE, LACING	11
2	2	1000243-21	FERRULE, ELECTRICAL COND	10
-	~~8~~	~~1000243-19~~	~~FERRULE, ELECTRICAL COND~~	~~9~~
9.2	9.2	1010402-1	SLEEVE, SOLDER	8
1.6	1.6	SEE NOTE 8	SLEEVING	7
0.1	0.1	SEE NOTE 8	SLEEVING	6
5.5	5.5	SEE NOTE 11	BRAID, WIRE	5
0.3	0.3	SEE NOTE 11	BRAID, WIRE	4
4.0	4.0	MIL-W-16878/4	BLK WIRE, ELECTRICAL, BLK	3
16.6	16.6	MIL-W-16878/4	BLK WIRE, ELECTRICAL, BLK	2
16.0	16.0	MIL-W-16878/4	BLK WIRE, ELECTRICAL, WHT	1

*DENOTES LENGTH IN FEET

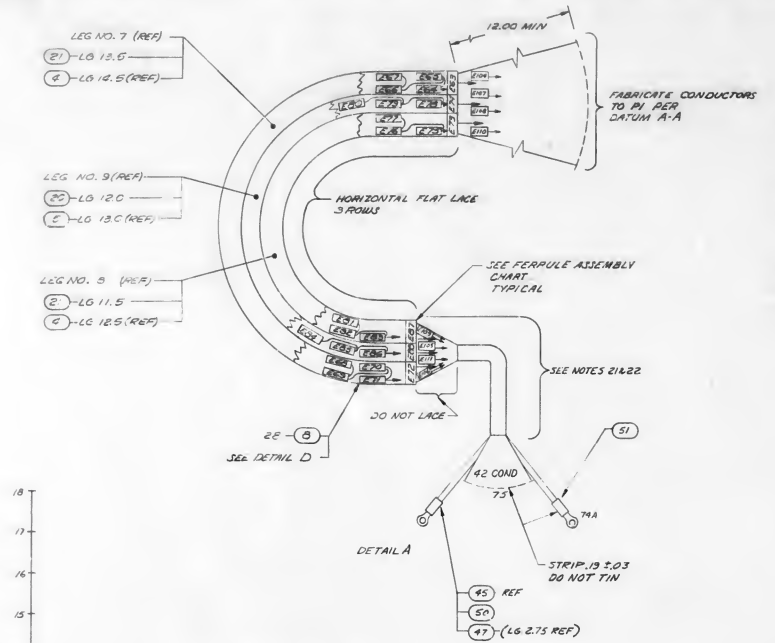
NOTES
1. FABRICATE PER ND 1002032 EXCEPT USE FIND NO. 33 UNLESS OTHERWISE SPECIFIED
2. MARK CONDUCTOR IDENTIFICATION PER ND 1002013
3. LACE ENTIRE HARNESS CONFIGURATION UNLESS OTHERWISE SPECIFIED
4. STRIP ALL LEADS .50 ±.12 & TIN PER ND 1002071 UNLESS OTHERWISE SPECIFIED
5. SERIALIZE PER ND 1002023
6. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND 1002013 USING BLACK INK 1006284-001
7. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS PREFIX WITH SUB-ASSEMBLY DESIGNATIONS
8. MIL-I-23053 CLASS 1, COLOR BLACK, I.D. .375 FOR FIND NO. 6; I.D. .500 FOR FIND NO. 7; SIZE NO. 16 FOR FIND NO. 27
9. CRIMP PER ND 1002206
10. ECND USING FIND NO. 19 SO THAT MARKING APPEARS ON OPPOSITE SIDE OF CABLE
11. QQ-B-575 BRAID SIZE 3/8 I.D. AWG 36 FOR FIND NO. 4; BRAID SIZE 1/4 I.D. AWG 36 FOR FIND NO. 5
12. AR DENOTES AS REQUIRED
13. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
14. NUMBERS ENCLOSED IN PARENTHESES INDICATE NUMBER OF CONDUCTORS
15. ~~THE SYMBOL Ø SHOWN ON ASSEMBLY INFORMATION CHART DENOTES INTERNAL CONNECTION~~
16. POT PER ND 1002009 METHOD E & PRIME
17. SEAL INSULATORS & CONTACTS PER ND 1002006 TYPE II
18. SLEEVE EVEN NUMBERED PINS ON EVEN NUMBERED ROWS AND ODD NUMBERED PINS ON ODD NUMBERED ROWS EXCEPT SLEEVE ALL PINS IN EXTREME HORIZONTAL & VERTICAL ROWS
19. FIND NO. 27 MUST BE IMBEDDED IN EPOXY ADHESIVE APPLIED PER NOTE 17 SO AS TO INSURE INSULATION OF CONTACTS
20. SPOT TIE ALL LEADS FROM STA NO. 19 THRU STA NO. 54 TO FIND NO. 37 USING FIND NO. 33

NOTES
21. SPIRAL WRAP USING FIND NO. 45 WITH 50% OVERLAP
22. SPIRAL WRAP USING FIND NO. 46 WITH 50% OVERLAP IN OPPOSITE DIRECTION OF FIND NO. 45
23. MIL-I-15126, THERMO SETTING, ADHESIVE BACKED, TYPE ACT, .75 WIDE
24. MIL-I-631, TYPE F, FORM U&, GRADE 2, CLASS 1, CATAGORY 1, COLOR BLK, AWG SIZE NO. 8
25. MIL-I-23053, CLASS 1, WHT, I.D. .25
26. MARK SLEEVING WITH REFERENCE DESIGNATION AS SHOWN .12 HIGH BLK PER ND 1002013
27. CUT SLEEVING AND BRAID LENGTHS AS SHOWN

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

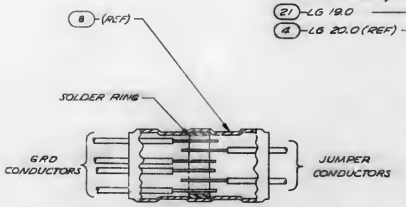
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .02, DECIMALS .02, ANGLES ±°	RAYTHEON CO. LEXINGTON, MASS. CONTRACT NO. NAS 9-4327	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
MATERIAL	DRAWN [illegible] DATE [illegible] CHECKED [illegible] APPROVED [illegible] APPROVED [illegible] NASA APPROVAL [illegible] MIT APPROVAL [illegible] MIT APPROVAL [illegible]	CABLE ASSEMBLY W226	
2014255 NEXT ASSY USED ON APPLICATION		CODE IDENT NO. 49956 SIZE J SCALE 1/1 WT	NASA DRAWING NO. 2014137 SHEET 1 OF 5

2014137 J

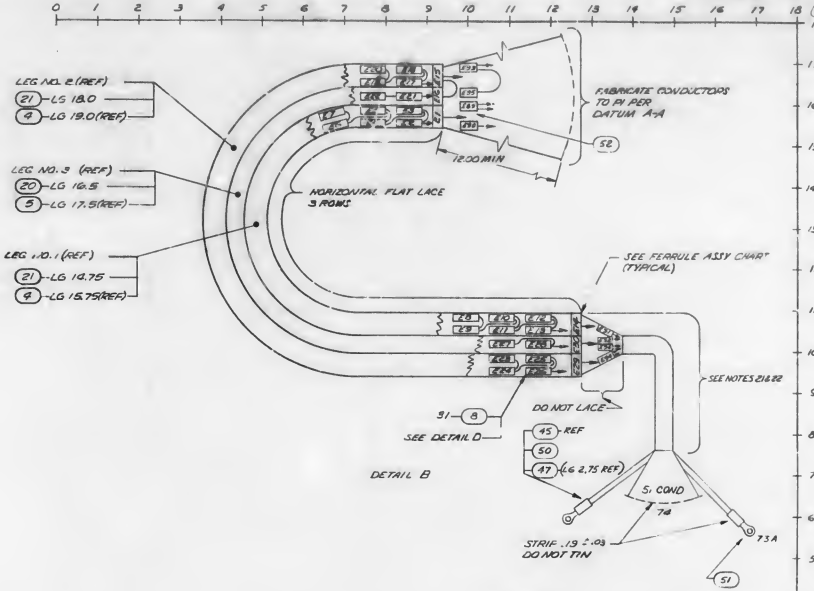


DETAIL A

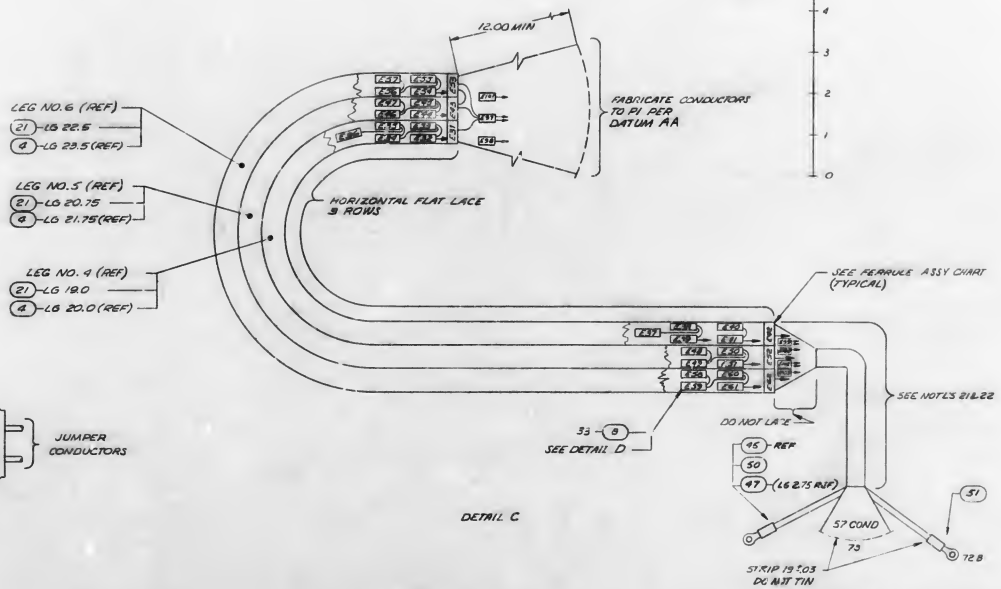
FERRULE ASSEMBLY CHART				
REF DES	FERRULE		SLEEVING	
	FIND NO. (INNER)	FIND NO. (OUTER)	FIND NO.	LENGTH
E1	14	18	7	1.12 ±.12
E14	14	18	7	
E15	12	17	7	
E16	10	16	6	
E29	12	17	7	
E30	10	16		
E31	13	16		
E42				
E43				
E52	14	18		
E53	12	17		
E62				
E63				
E72	12			
E73	13			
E74				
E57				
E88	13	17	7	1.12 ±.12



DETAIL D
92 PLACES
SCALE: NONE



DETAIL B



DETAIL C

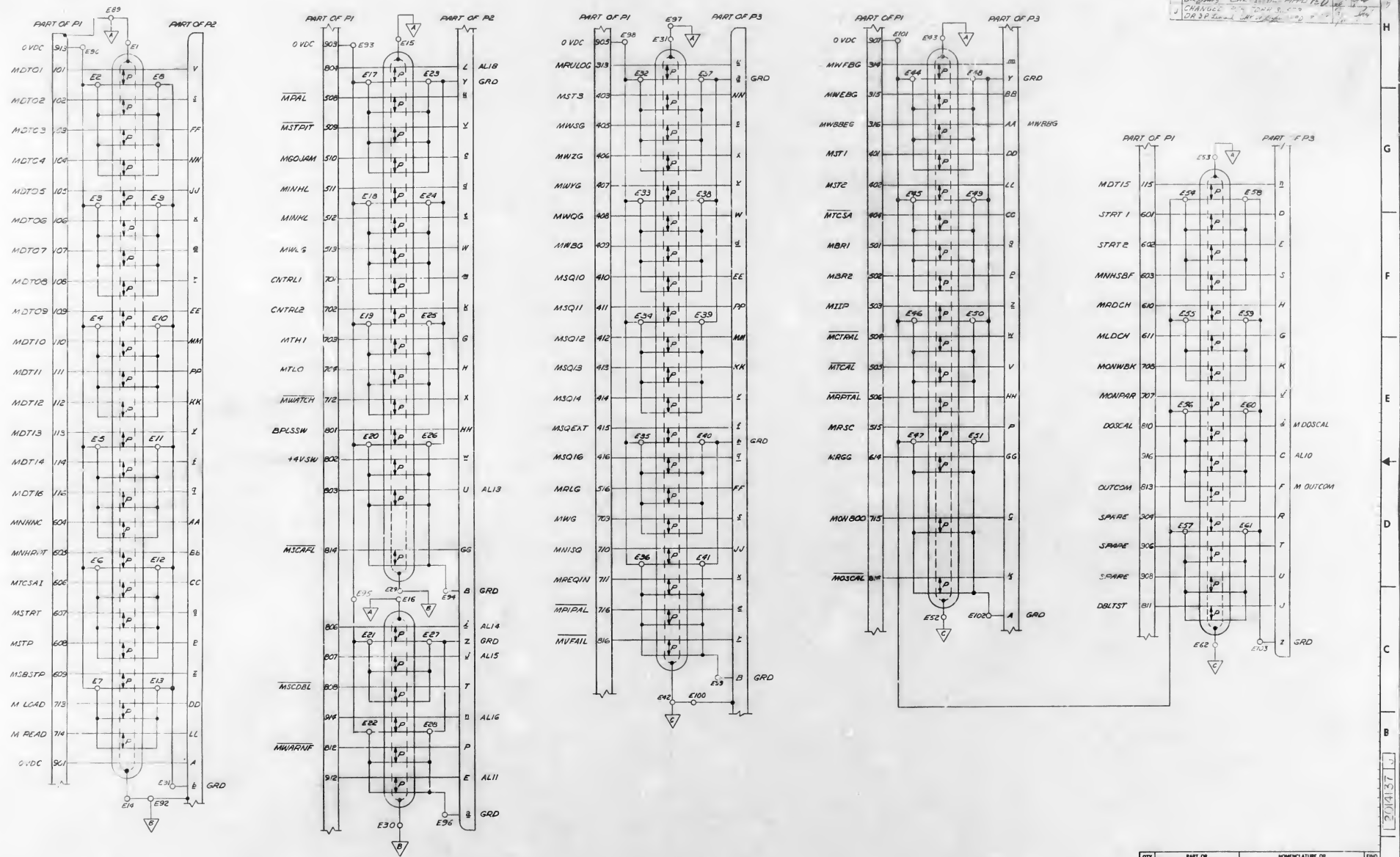
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
G	CLASS A RELEASED PER TDRR 2-4578		
H	CHANGED PER TDRR 2882 OR [illegible] C.N.R. [illegible]		
J	CHANGED PER TDRR 3637 DRAFTSMAN CHK'D [illegible] APP'D	3-10-7	

QTY PER	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FSCM NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±		DIVISION OF LEXINGTON, MASS. CONTRACT NO. NAS 9-937	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		DRAWN [illegible] DATE [illegible]	CABLE ASSEMBLY W226
		CHECKED [illegible] AS REQ'D	
		ENGINEER [illegible] AS REQ'D	
		APPROVAL [illegible] AS REQ'D	
		MFG'G APPROVAL [illegible]	
		QUAL APPROVAL [illegible]	
		MFG APPROVAL [illegible]	
		QUAL APPROVAL [illegible]	
MATERIAL			
NEXT ASSY	USED ON		
APPLICATION			

CODE IDENT NO	SIZE	ROUP DRAWING NO
49956	J	2014137
SCALE 1/1	WT	SHEET 2 OF 5

2014137 J



SYM	DESCRIPTION	DATE	APPROVED
G	CLASS A RELEASED PER TDRR 27496		
H	CHANGED PER TDRR 28826 DR 30005 CHG LTR AMPD PER		
J	CHANGED PER TDRR 31279 DR 32		

2014137 J

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX ± .01, .XXX ± .005, ANGLES ± 1°
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NAS9-137
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

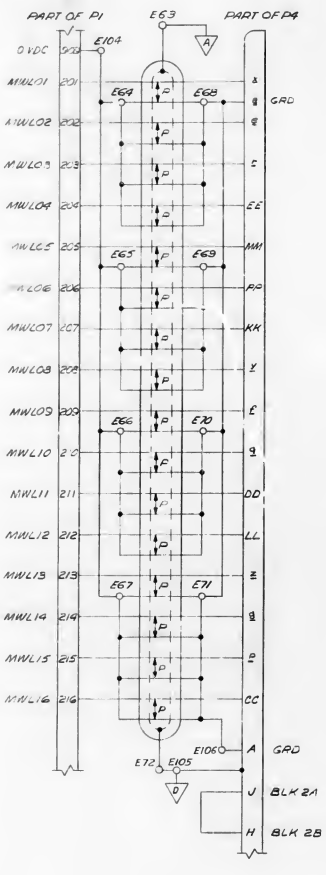
CAELE ASSEMBLY
W 2/6

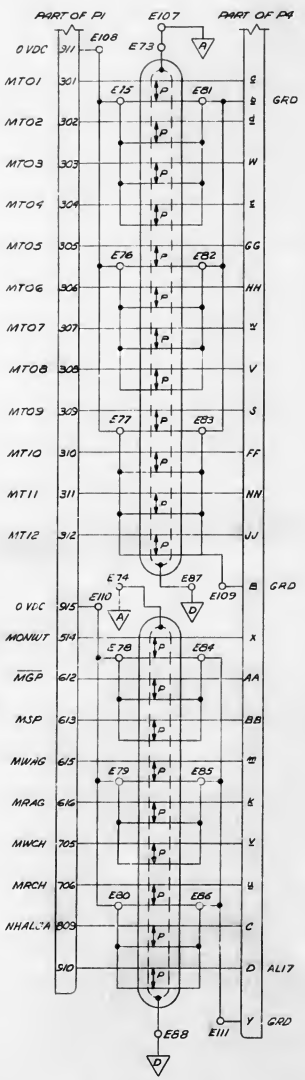
CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014137
SCALE NONE | WT | SHEET 3 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014137 J

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
G	CLASS A RELEASED PER TDRR 27078		
H	CHANGED PER TDRR 28826 DRAWN CHECKED APPD		
J	CHANGED PER TDRR 30673 DRAWN CHK'D APPD		





ASSEMBLY INFORMATION CHART

FROM REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	TO FIND NO.	TO STA NO.	TO DES	TO REMARKS
LEG NO.1 REF	A1	9	P1-101	WHT	24	1	74	P2-V	TWIST
	A2	△	E2	BLK		2	△	E8	
	A3	9	P1-102	WHT		1	74	P2-S	
	A4	△	E2	BLK		2	△	E8	
	A5	18	P1-103	WHT		1	74	P2-FF	
	A6	△	E2	BLK		2	△	E8	
	A7	18	P1-104	WHT		1	74	P2-NN	
	A8	△	E2	BK		2	△	E8	
	A9	27	P1-105	WHT		1	74	P2-W	
	A10	△	E3	BLK		2	△	E9	
	A11	27	P1-106	WHT		1	74	P2-L	
	A12	△	E3	BLK		2	△	E9	
	A13	36	P1-107	WHT		1	74	P2-S	
	A14	△	E3	BLK		2	△	E9	
	A15	36	P1-108	WHT		1	74	P2-T	
	A16	△	E3	BLK		2	△	E9	
	A17	45	P1-109	WHT		1	74	P2-EE	
	A18	△	E4	BLK		2	△	E10	
	A19	45	P1-110	WHT		1	74	P2-MM	
	A20	△	E4	BLK		2	△	E10	
	A21	54	P1-111	WHT		1	74	P2-PP	
	A22	△	E4	BLK		2	△	E10	
	A23	54	P1-112	WHT		1	74	P2-KK	
	A24	△	E4	BLK		2	△	E10	
	A25	63	P1-113	WHT		1	74	P2-Y	
	A26	△	E5	BLK		2	△	E11	
	A27	63	P1-114	WHT		1	74	P2-E	
	A28	△	E5	BLK		2	△	E11	
	A29	72	P1-116	WHT		1	74	P2-S	
	A30	△	E5	BLK		2	△	E11	
	A31	13	P1-604	WHT		1	74	P2-AA	
	A32	△	E5	BLK		2	△	E11	
	A33	22	P1-605	WHT		1	74	P2-BB	
	A34	△	E6	BLK		2	△	E12	
	A35	22	P1-606	WHT		1	74	P2-CC	
	A36	△	E6	BLK		2	△	E12	
	A37	31	P1-607	WHT		1	74	P2-S	
	A38	△	E6	BLK		2	△	E12	
	A39	31	P1-608	WHT		1	74	P2-T	
	A40	△	E6	BLK		2	△	E12	
	A41	40	P1-609	WHT		1	74	P2-S	
	A42	△	E7	BLK		2	△	E13	
	A43	57	P1-713	WHT		1	74	P2-DD	
	A44	△	E7	BLK		2	△	E13	
	A45	57	P1-714	WHT		1	74	P2-LL	
	A46	△	E7	BLK	24	2	△	E19	TWIST
	A47	55	P1-913	BLK	22	3	△	E90	
	A48	△	E1					E89	
	A49		E2					E3	
	A50		E3					E4	
	A51		E4					E5	
	A52		E5					E6	
	A53		E6					E7	
	A54		E8					E9	
	A55		E9					E10	
	A56		E10					E11	
	A57		E11					E12	
	A58		E12					E13	
	A59		E13					E91	
	A60	△	E14				△	E92	
	A61	1	P1-901	BLK	22	3	74	P2-A	
LEG NO.1 REF		△	E1	BRAID	36	4	△	E14	
LEG NO.2 REF	A63	11	P1-804	WHT	24	1	74	P2-L	TWIST
	A64	△	E17	BLK		2	△	E23	
	A65	32	P1-308	WHT		1	74	P2-K	
	A66	△	E17	BLK		2	△	E23	
	A67	41	P1-309	WHT		1	74	P2-Y	
	A68	△	E17	BLK		2	△	E23	
	A69	41	P1-310	WHT		1	74	P2-S	
	A70	△	E17	BLK		2	△	E23	
	A71	50	P1-311	WHT		1	74	P2-K	
	A72	△	E18	BLK		2	△	E24	
	A73	50	P1-312	WHT		1	74	P2-S	
	A74	△	E18	BLK		2	△	E24	
	A75	59	P1-313	WHT		1	74	P2-W	
	A76	△	E18	BLK		2	△	E24	
	A77	3	P1-701	WHT		1	74	P2-M	
	A78	△	E18	BLK		2	△	E24	
	A79	3	P1-702	WHT		1	74	P2-B	
	A80	△	E19	BLK		2	△	E25	
	A81	12	P1-703	WHT		1	74	P2-G	
	A82	△	E19	BLK		2	△	E25	
	A83	12	P1-704	WHT		1	74	P2-H	
	A84	△	E19	BLK		2	△	E25	
	A85	48	P1-712	WHT		1	74	P2-J	
LEG NO.2 REF	A86	△	E19	BLK	24	2	△	E25	TWIST

△ DENOTES INTERNAL CONNECTION
& ATTACH 2.00 OF FINC 53, SEE NOTE 26

ASSEMBLY INFORMATING CHART

FROM REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	TO FIND NO.	TO STA NO.	TO DES	TO REMARKS
LEG NO.2 REF	A87	2	P1-801	WHT	24	1	74	P2-HH	TWIST
	A88	△	E20	BLK		2	△	E26	
	A89	2	P1-802	WHT		1	74	P2-W	
	A90	△	E20	BLK		2	△	E26	
	A91	11	P1-803	WHT		1	74	P2-U	
	A92	△	E20	BLK		2	△	E26	
	A93	26	P1-814	WHT		1	74	P2-GG	
	A94	△	E20	BLK	24	2	△	E26	TWIST
	A95	10	P1-903	BLK	22	3	△	E93	
	A96	△	E15					E89	
	A97		E17					E18	
	A98		E18					E19	
	A99		E19					E20	
	A100		E23					E24	
	A101		E24					E25	
	A102		E25					E26	
	A103		E26					E94	
	A104		E29	BLK	22	3		E92	
LEG NO.2 REF		△	E15	BRAID	36	4	△	E29	
LEG NO.2 REF	A106	△	E15	BLK	22	3	△	E16	LEG NO.3 REF
LEG NO.3 REF	A107	20	P1-506	WHT	24	1	74	P2-S	TWIST
	A108	△	E21	BLK		2	△	E27	
	A109	29	P1-807	WHT		1	74	P2-X	
	A110	△	E21	BLK		2	△	E27	
	A111	29	P1-508	WHT		1	74	P2-T	
	A112	△	E21	BLK		2	△	E27	
	A113	53	P1-314	WHT		1	74	P2-B	
	A114	△	E22	BLK		2	△	E28	
	A115	47	P1-812	WHT		1	74	P2-P	
	A116	△	E22	BLK		2	△	E28	
	A117	96	P1-912	WHT		1	74	P2-E	TWIST
	A118	△	E22	BLK	24	2	△	E28	
	A119		E35	BLK	22	3	△	E21	
	A120		E21					E22	
	A121		E27					E28	
	A122		E28					E91	
	A123		E90	BLK	22	3		E92	
LEG NO.3 REF		△	E16	BRAID	36	5	△	E30	

SEE SHEET 5 FOR A125 THRU A373

LEG NO.3 REF	A374	△	E96	BLK	22	3	74	P2-Z
LEG NO.3 REF	A375		E96				74	P2-S
LEG NO.4 REF	A376		E32				△	E98
	A377		E97				△	E89 LEG NO.1 REF
	A378		E99				73	P3-B
	A379		E99				73	P3-B
LEG NO.4 REF	A380		E100				728	P3-GND &
LEG NO.5 REF	A381		E44				△	E101
	A382		E102				73	P3-A
LEG NO.5 REF	A383		E102				73	P3-Y
LEG NO.6 REF	A384		E103				73	P3-Z
LEG NO.7 REF	A385		E107				△	E97 LEG NO.4 REF
	A386		E64				△	E104
	A387		E106				75	P4-A
	A388		E106				75	P4-B
LEG NO.7 REF	A389		E105				74A	P4-GND &
LEG NO.8 REF	A390		E75				△	E108
	A391		E109				75	P4-B
LEG NO.8 REF	A392		E109				75	P4-B
LEG NO.9 REF	A393		E78				△	E110
LEG NO.9 REF	A394		E111				75	P4-Y
LEG NO.6 REF	A395	△	E54	BLK	22	3	△	E101 LEG NO.5 REF

QTY REQ'D	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS ANGLES
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-4329
DRAWN DATE 12 MAR 64
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. G. MITCHELL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY
W226

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014137
SCALE NONE | WT | SHEET 4 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014137 J

REVISIONS		
LTR	DESCRIPTION	DATE
G	IS CLASS A RELEASED PER TDRR 27610	
H	CHANGED PER TDRR 29826 DR'd CHK'd APPD PE'D	
J	CHANGED PER TDRR 30573 DR'd CHK'd APPD PE'D	

ASSEMBLY INFORMATION CHART

FROM REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO.	TO STA NO.	TO DES	TO REMARKS
LEG NO. 4 REF	A125	61	P1-314	WHT	24	1	73	P3-U	TWIST
	A126	△	E32	BLK		2	△	E37	
	A127	5	P4-402	WHT		1	73	P3-NN	
	A128	△	E32	BLK		2	△	E37	
	A123	24	P4-405	WHT		1	73	P3-S	
	A190	△	E32	BLK		2	△	E37	
	A131	24	P1-106	WHT		1	73	P3-X	
	A132	△	E32	BLK		2	△	E37	
	A133	33	P1-907	WHT		1	73	P3-Y	
	A134	△	E33	BLK		2	△	E38	
	A135	33	P1-908	WHT		1	73	P3-W	
	A136	△	E33	BLK		2	△	E38	
	A137	42	P1-910	WHT		1	73	P3-Z	
	A138	△	E33	BLK		2	△	E38	
	A139	42	P1-910	WHT		1	73	P3-EE	
	A140	△	E33	BLK		2	△	E38	
	A141	51	P1-911	WHT		1	73	P3-AA	
	A142	△	E34	BLK		2	△	E39	
	A143	51	P1-912	WHT		1	73	P3-MM	
	A144	△	E34	BLK		2	△	E39	
	A145	60	P1-913	WHT		1	73	P3-KK	
	A146	△	E34	BLK		2	△	E39	
	A147	60	P1-914	WHT		1	73	P3-X	
	A148	△	E34	BLK		2	△	E39	
	A149	69	P1-915	WHT		1	73	P3-E	
	A150	△	E35	BLK		2	△	E40	
	A151	69	P1-916	WHT		1	73	P3-T	
	A152	△	E35	BLK		2	△	E40	
	A153	69	P1-516	WHT		1	73	P3-FF	
	A154	△	E35	BLK		2	△	E40	
	A155	39	P1-709	WHT		1	73	P3-S	
	A156	△	E35	BLK		2	△	E40	
	A157	39	P1-710	WHT		1	73	P3-W	
	A158	△	E36	BLK		2	△	E41	
	A159	39	P1-711	WHT		1	73	P3-Z	
	A160	△	E36	BLK		2	△	E41	
	A161	66	P1-716	WHT		1	73	P3-T	
	A162	△	E36	BLK		2	△	E41	
	A163	63	P1-816	WHT		1	73	P3-Y	TWIST
	A164	△	E36	BLK	24	2	△	E41	
	A165	19	P1-208	BLK	32	3		E98	
	A166	△	E31				△	E97	
	A167		E32					E33	
	A168		E33					E34	
	A169		E34					E35	
	A170		E35					E36	
	A171		E37				△	E38	
	A172		E38				△	E39	
	A173		E39				73	P3-B	
	A174		E90				△	E91	
	A175		E91				△	E93	
	A176	▼	E92	BLK	22	3	△	E100	
LEG NO. 4 REF		△	E31	BRAID	36	4	△	E42	
LEG NO. 5 REF	A178	61	P1-314	WHT	24	1	73	P3-T	TWIST
	A179	△	E44	BLK		2	△	E48	
	A180	70	P1-315	WHT		1	73	P3-BB	
	A181	△	E44	BLK		2	△	E48	
	A182	70	P1-316	WHT		1	73	P3-AA	
	A183	△	E44	BLK		2	△	E48	
	A184	6	P1-901	WHT		1	73	P3-DD	
	A185	△	E44	BLK		2	△	E48	
	A186	6	P1-902	WHT		1	73	P3-LL	
	A187	△	E45	BLK		2	△	E49	
	A188	15	P1-904	WHT		1	73	P3-CC	
	A189	△	E45	BLK		2	△	E49	
	A190	5	P1-301	WHT		1	73	P3-B	
	A191	△	E45	BLK		2	△	E49	
	A192	5	P1-302	WHT		1	73	P3-D	
	A193	△	E45	BLK		2	△	E49	
	A194	14	P1-303	WHT		1	73	P3-F	
	A195	△	E46	BLK		2	△	E50	
	A196	23	P1-304	WHT		1	73	P3-H	
	A197	△	E46	BLK		2	△	E50	
	A198	23	P1-905	WHT		1	73	P3-V	
	A199	△	E46	BLK		2	△	E50	
	A200	23	P1-306	WHT		1	73	P3-HH	
	A201	△	E46	BLK		2	△	E50	
	A202	68	P1-315	WHT		1	73	P3-JJ	
	A203	△	E47	BLK		2	△	E51	
	A204	38	P1-614	WHT		1	73	P3-GG	
	A205	△	E47	BLK		2	△	E51	
	A206	66	P1-715	WHT		1	73	P3-C	
	A207	△	E47	BLK		2	△	E51	
	A208	63	P1-815	WHT		1	73	P3-R	
LEG NO. 5 REF	A209	△	E47	BLK	24	2	△	E51	TWIST

ASSEMBLY INFORMATION CHART

FROM REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO.	TO STA NO.	TO DES	TO REMARKS
LEG NO. 5 REF	A210	28	P1-907	BLK	22	3	△	E101	
	A211	△	E43					E97	
	A212		E44					E45	
	A213		E45					E46	
	A214		E46					E47	
	A215		E48					E49	
	A216		E49					E50	
	A217		E50					E51	
	A218		E51					E102	
	A219	▼	E52	BLK	22	3		E100	
LEG NO. 5 REF		△	E43	BRAID	36	4	△	E52	
LEG NO. 5 REF	A221	△	E43	BLK	22	3	△	E59	LEG NO. 6 REF
LEG NO. 6 REF	A222	72	P1-115	WHT	24	1	73	P3-V	TWIST
	A223	△	E54	BLK		2	△	E58	
	A224	9	P1-601	WHT		1	73	P3-D	
	A225	△	E54	BLK		2	△	E58	
	A226	9	P1-602	WHT		1	73	P3-E	
	A227	△	E54	BLK		2	△	E58	
	A228	13	P1-603	WHT		1	73	P3-S	
	A229	△	E54	BLK		2	△	E58	
	A230	40	P1-610	WHT		1	73	P3-H	
	A231	△	E55	BLK		2	△	E59	
	A232	49	P1-611	WHT		1	73	P3-G	
	A233	△	E55	BLK		2	△	E59	
	A234	50	P1-705	WHT		1	73	P3-M	
	A235	△	E55	BLK		2	△	E59	
	A236	50	P1-707	WHT		1	73	P3-Z	
	A237	△	E56	BLK		2	△	E60	
	A238	38	P1-810	WHT		1	73	P3-S	
	A239	△	E56	BLK		2	△	E60	
	A240	64	P1-516	WHT		1	73	P3-C	
	A241	△	E56	BLK		2	△	E60	
	A242	56	P1-813	WHT		1	73	P3-F	
	A243	△	E56	BLK		2	△	E60	
	A244	10	P1-904	WHT		1	73	P3-R	
	A245	△	E57	BLK		2	△	E61	
	A246	19	P1-906	WHT		1	73	P3-T	
	A247	△	E57	BLK		2	△	E61	
	A248	47	P1-811	WHT		1	73	P3-J	
	A249	△	E57	BLK		2	△	E61	
	A250	28	P1-308	WHT		1	73	P3-U	TWIST
	A251	△	E57	BLK	24	2	△	E61	
	A252	▼	E53	BLK	22	3		E97	
	A253		E54					E55	
	A254		E55					E56	
	A255		E56					E57	
	A256		E58					E59	
	A257		E59					E60	
	A258		E60					E61	
	A259		E61					E103	
	A260	▼	E62	BLK	22	3	△	E100	
LEG NO. 6 REF		△	E53	BRAID	36	4	△	E62	
LEG NO. 7 REF	A262	8	P1-201	WHT	24	1	75	P4-E	TWIST
	A263	△	E64	BLK		2	△	E68	
	A264	8	P1-202	WHT		1	75	P4-G	
	A265	△	E64	BLK		2	△	E68	
	A266	17	P1-203	WHT		1	75	P4-L	
	A267	△	E64	BLK		2	△	E68	
	A268	17	P1-204	WHT		1	75	P4-EE	
	A269	△	E64	BLK		2	△	E68	
	A270	26	P1-205	WHT		1	75	P4-MM	
	A271	△	E63	BLK		2	△	E63	
	A272	26	P1-206	WHT		1	75	P4-PP	
	A273	△	E63	BLK		2	△	E63	
	A274	35	P1-207	WHT		1	75	P4-KK	
	A275	△	E63	BLK		2	△	E63	
	A276	35	P1-208	WHT		1	75	P4-Y	
	A277	△	E63	BLK		2	△	E63	
	A278	44	P1-209	WHT		1	75	P4-Z	
	A279	△	E66	BLK		2	△	E70	
	A280	44	P1-210	WHT		1	75	P4-S	
	A281	△	E66	BLK		2	△	E70	
	A282	53	P1-211	WHT		1	75	P4-DD	
	A283	△	E66	BLK		2	△	E70	
	A284	53	P1-212	WHT		1	75	P4-LL	
	A285	△	E66	BLK		2	△	E70	
	A286	62	P1-213	WHT		1	75	P4-R	
	A287	△	E67	BLK		2	△	E71	
	A288	62	P1-214	WHT		1	75	P4-Q	TWIST
LEG NO. 7 REF	A289	△	E67	BLK	24	2	△	E71	

ASSEMBLY INFORMATION CHART

FROM REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO.	TO STA NO.	TO DES	TO REMARKS
LEG NO. 7 REF	A290	71	P1-215	WHT	24	1	75	P4-B	TWIST
	A291	△	E67	BLK		2	△	E71	
	A292	71	P1-216	WHT		1	75	P4-CC	TWIST
	A293	△	E67	BLK	24	2	△	E71	
	A294	37	P1-509	BLK	22	3		E104	
	A295	△	E23					E107	
	A296		E24					E65	
	A297		E65					E66	
	A298		E66					E67	
	A299		E68					E69	
	A300		E29					E70	
	A301		E70					E71	
	A302		E71					E106	
	A303	▼	E72	BLK	22	3	△	E105	
LEG NO. 7 REF			E68	BRAID	36	4		E72	
LEG NO. 8 REF	A305	7	P1-301	WHT	24	1	75	P4-A	TWIST
	A306	△	E73	BLK		2	△	E81	
	A307	7	P1-302	WHT		1	75	P4-F	
	A308	△	E75	BLK		2	△	E81	
	A309	16	P1-303	WHT		1	75	P4-W	
	A310	△	E75	BLK		2	△	E81	
	A311	16	P1-304	WHT		1	75	P4-K	
	A312	△	E75	BLK		2	△	E81	
	A313	25	P1-905	WHT		1	75	P4-GG	
	A314	△	E76	BLK		2	△	E82	
	A315	25	P1-306	WHT		1	75	P4-HH	
	A316	△	E76	BLK		2	△	E82	
	A317	34	P1-307	WHT		1	75	P4-U	
	A318	△	E76	BLK		2	△	E82	
	A319	34	P1-308	WHT		1	75	P4-V	
	A320	△	E76	BLK		2	△	E82	
	A321	43	P1-309	WHT		1	75	P4-S	
	A322	△	E77	BLK		2	△	E83	
	A323	43	P1-310	WHT		1	75	P4-FF	
	A324	△	E77	BLK		2	△	E83	
	A325	52	P1-311	WHT		1	75	P4-NN	
	A326	△	E77	BLK		2	△	E83	
	A327	52	P1-312	WHT		1	75	P4-W	TWIST
	A328	△	E77	BLK	24	2	△	E83	
	A329	46	P1-311	BLK	22	3		E108	
	A330	△	E73					E107	
	A331		E75					E76	
	A332		E76					E77	
	A333		E81					E82	
	A334		E82					E83	
	A335		E83					E109	
	A336	▼	E87	BLK	22	3		E105	
LEG NO. 8 REF		△	E73	BRAID	36	4	△	E87	
LEG NO. 9 REF	A338	59	P1-514	WHT	24	1	75	P4-J	TWIST
	A339	△	E78	BLK		2	△	E84	
	A340	49	P1-612	WHT		1	75	P4-AA	
	A341	△	E78	BLK		2	△	E84	
	A342	28	P1-613	WHT		1	75	P4-BB	
	A343	△	E78	BLK		2	△	E84	
	A344	67	P1-615	WHT		1	75	P4-II	
	A345	△	E79	BLK		2	△	E85	
	A346	67	P1-616	WHT		1	75	P4-K	
	A347	△	E79	BLK		2	△	E85	
	A348	21	P1-205	WHT		1	75	P4-Y	
	A349	△	E79	BLK		2	△	E85	
	A350	21	P1-206	WHT		1	75	P4-S	
	A351	△	E80	BLK		2	△	E86	
	A352	38	P1-803	WHT		1	75	P4-C	
	A353	△	E80	BLK		2	△	E86	
	A354	27	P1-910	WHT		1	75	P4-D	TWIST
	A355	△	E80	BLK	24	2	△	E86	
	A356	69	P1-515	BLK	22	3		E110	
	A357	△	E74					E107	
	A358		E78					E79	
	A359		E79					E80	
	A360		E84					E85	
	A361		E85					E86	
	A362		E86					E111	
	A363	▼	E88	BLK	22	3		E105	
LEG NO. 9 REF			E78	BRAID	36	4	△	E88	
	A365		P4-M	BLK	22	3	△	P4-J	
LEG NO. 1 REF	A366		E89	BRAID	36	4	76K	P1-GRD	
	A367		E2	BLK	22	3	△	E90	
	A368		E91				74	P2-L	
LEG NO. 1 REF	A369		E92				73A	P2-GRD	△
LEG NO. 2 REF	A370		E17				△	E93	
	A371		E94				74	P2-Y	
	A372		E94				72	P2-B	
LEG NO. 2 REF	A373	△	E93	BLK	22	3	△	E95	LEG NO. 3 REF

SEE SHEET 4 FOR A374 THRU A395

QTY REQD	PART OR IDENTIFYING NO.	NOUCHCLATURE OR DESCRIPTION
		LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .X ±.1 .XX ±.02 .XXX ±.005 ANGLES ±1°
DO NOT SCALE DRAWING
MATERIAL

NEXT ASSY | USED ON | APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

CONTRACT NO.	NAS 9-497
DRAWING	DATE 12 MAR 64
CHECKING	DATE 12 MAR 64
APPROVAL	DATE 12 MAR 64
APPROVAL	DATE 12 MAR 64
NASA APPROVAL	DATE 12 MAR 64
MFT. APPROVAL	DATE 12 MAR 64
I&T APPROVAL	DATE 12 MAR 64

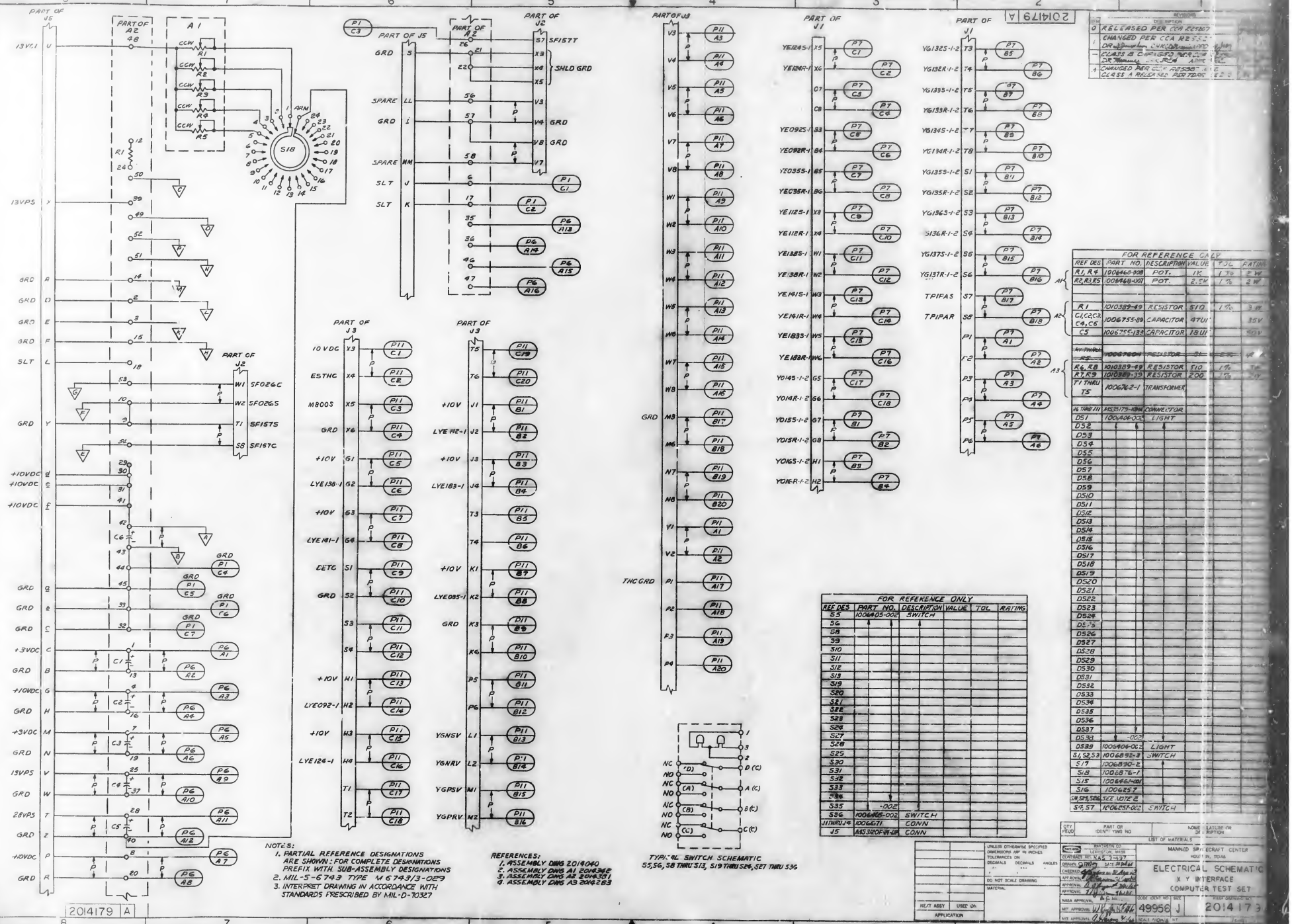
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY
W226

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	J	2014137

SCALE NONE | WT | SHEET 3 OF 5

2014137 J



NOTES:
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS PREFIX WITH SUB-ASSEMBLY DESIGNATIONS
2. MIL-S-6743 TYPE M 6743/3-029
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REFERENCES:
1. ASSEMBLY DWG 2014040
2. ASSEMBLY DWG A1 2014341
3. ASSEMBLY DWG A2 2014301
4. ASSEMBLY DWG A3 2046283

TYPICAL SWITCH SCHEMATIC
S5,S6,S8 THRU S13, S19 THRU S24, S27 THRU S36

FOR REFERENCE ONLY

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
S5	1006405-002	SWITCH			
S6					
S8					
S9					
S10					
S11					
S12					
S13					
S19					
S20					
S21					
S22					
S23					
S24					
S27					
S28					
S29					
S30					
S31					
S32					
S33					
S34					
S35	-002				
S36	1006405-002	SWITCH			
J1 THRU J4	1006671	CONN			
J5	MS3120F-41-1P	CONN			

FOR REFERENCE CALC

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1, R4	1004468-008	POT.	1K	1%	2 W
R2,R3,R5	1004468-007	POT.	2.5K	1%	2 W
R1	1010389-49	RESISTOR	510	1%	1/8 W
C1,C2,C3, C4,C6	1006755-89	CAPACITOR	47UF		35V
C5	1006756-139	CAPACITOR	18UF		50V
R5	1006760-4	RESISTOR	5K	1%	1/8 W
R6, R8	1010389-49	RESISTOR	510	1%	1/8 W
R7,R9	1010389-39	RESISTOR	200	1%	1/8 W
T1 THRU T5	1006762-1	TRANSFORMER			
J1 THRU J4	MS3179-40M	CONNECTOR			
DS1	1006406-003	LIGHT			
DS2 THRU DS38					
DS39	1006406-002	LIGHT			
S1,S2,S3	1006892-3	SWITCH			
S17	1006830-2				
S18	1006876-1				
S25	1006845-001				
S26	1006857				
S4,S25,S26	SEE NOTE 2				
S4,S7	1006857-002	SWITCH			

QTY /ASSY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION

LIST OF MATERIALS

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .X ± .03 .XX ± .01 .XXX ± .005 FRACTIONS ± 1/64 ANGLES ± 1°	RAYTHEON CO. LEXINGTON, MASS. SCALE NAS 3-2937 DRAWN DATE CHECKED APP ENGR APPROVAL APPROVAL NASA APPROVAL MIT APPROVAL
		DO NOT SCALE DRAWING MATERIAL	
REV'T ASSY	USED ON APPLICATION		

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

ELECTRICAL SCHEMATIC X Y INTERFACE COMPUTER TEST SET

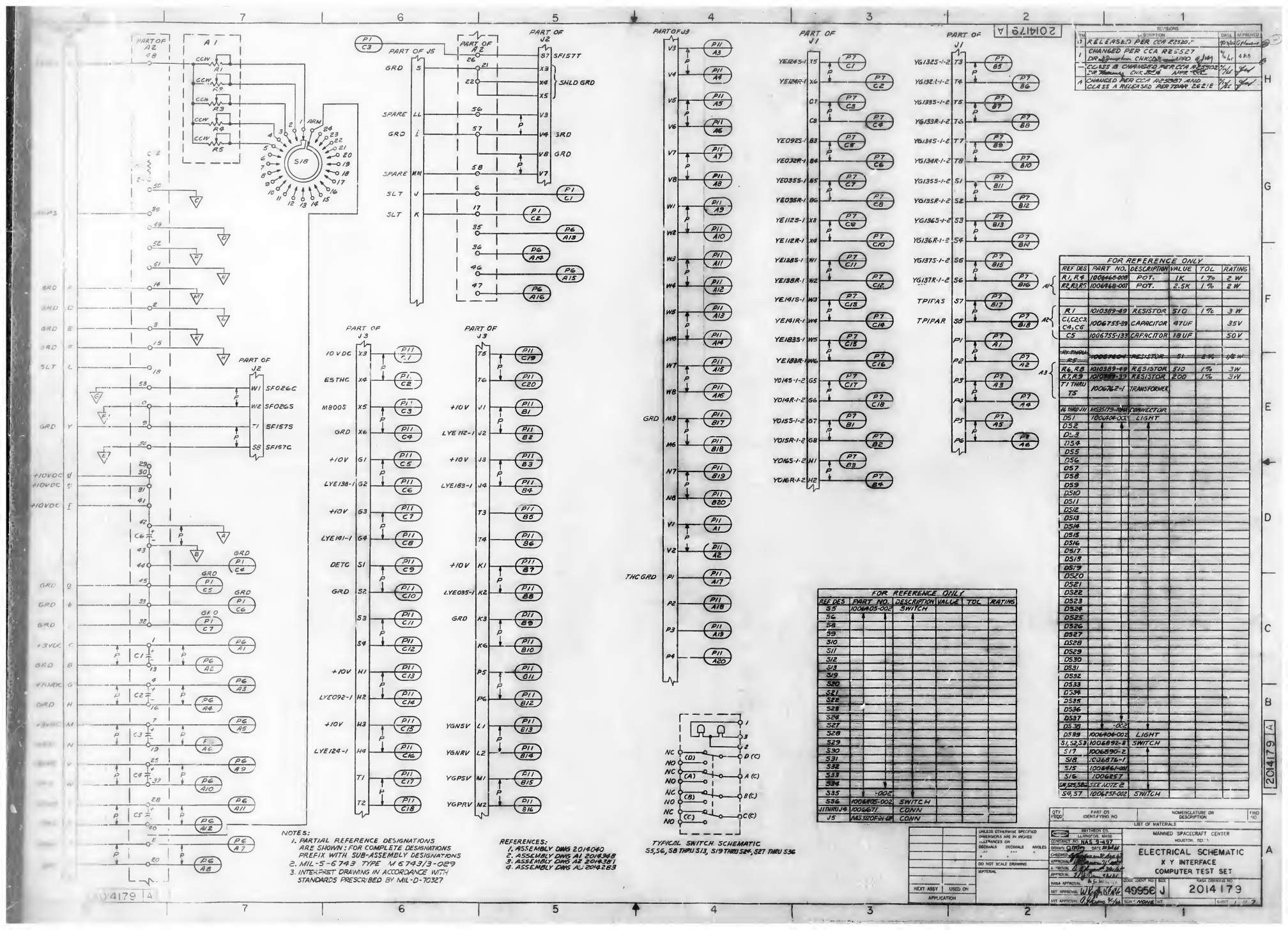
CODE IDENT NO. 49956 SIZE J

DRAWING NO. 2014179

SCALE NONE SHT

2014179 A

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R2580		
1	CHANGED PER CCA R2582 DR CHK APPD		
—	CLASS B CHANGED PER CCA R2586 DR CHK APPD		
A	CHANGED PER CCA R2598 CLASS A RELEASED PER TDRR		



REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
J	RELEASED PER CCA R2520-F	7/26/67	G Hanna
H	CHANGED PER CCA R2552-7 DR 2 per Memo dtd 7/26/67 CHK'D BY [illegible] APPD [illegible]	9/14/67	[illegible]
—	CLASS B CHANGED PER CCA R2703-2 per Memo dtd 9/13/67 APPR [illegible]	9/14/67	[illegible]
A	CHANGED PER CCA R2703-7 AND CLASS A RELEASED PER TDAR 2621-8	9/14/67	[illegible]

FOR REFERENCE ONLY

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING	
R1, R4	1006468-008	POT.	1K	1%	2 W	
R2,R3,R5	1006468-001	POT.	2.5K	1%	2 W	
R1	1010389-49	RESISTOR	510	1%	3 W	
C1,C2,C3, C4,C6	1006755-89	CAPACITOR	47UF		35V	
C5	1006755-133	CAPACITOR	18UF		50V	
R7 THRU R5	1006760-1	RESISTOR	51	5%	1/2 W	
R6, R8	1010389-49	RESISTOR	510	1%	3W	
R1,R3	1010389-33	RESISTOR	200	1%	3W	
T1 THRU T5	1006762-1	TRANSFORMER				
J6 THRU J11	M83179-1001	CONNECTOR				
DS1	1006406-001	LIGHT				
DS2						
DS3						
DS4						
DS5						
DS6						
DS7						
DS8						
DS9						
DS10						
DS11						
DS12						
DS13						
DS14						
DS15						
DS16						
DS17						
DS18						
DS19						
DS20						
DS21						
DS22						
DS23						
DS24						
DS25						
DS26						
DS27						
DS28						
DS29						
DS30						
DS31						
DS32						
DS33						
DS34						
DS35						
DS36		-002				
DS39	1006406-002	LIGHT				
S1, S2, S3	1006892-8	SWITCH				
S17	1006890-2					
S18	1006876-1					
S25	1006876-101					
S16	1006857					
S4, S26, S38	SEE NOTE 2					
S4, S7	1006851-002	SWITCH				

FOR REFERENCE ONLY

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
S5	1006805-002	SWITCH			
S6					
S8					
S9					
S10					
S11					
S12					
S13					
S19					
S20					
S21					
S22					
S23					
S24					
S27					
S28					
S29					
S30					
S31					
S32					
S33					
S34					
S35	-002				
S36	1006805-002	SWITCH			
J1 THRU J4	1006671	CONN			
J5	M83120F24-1P	CONN			

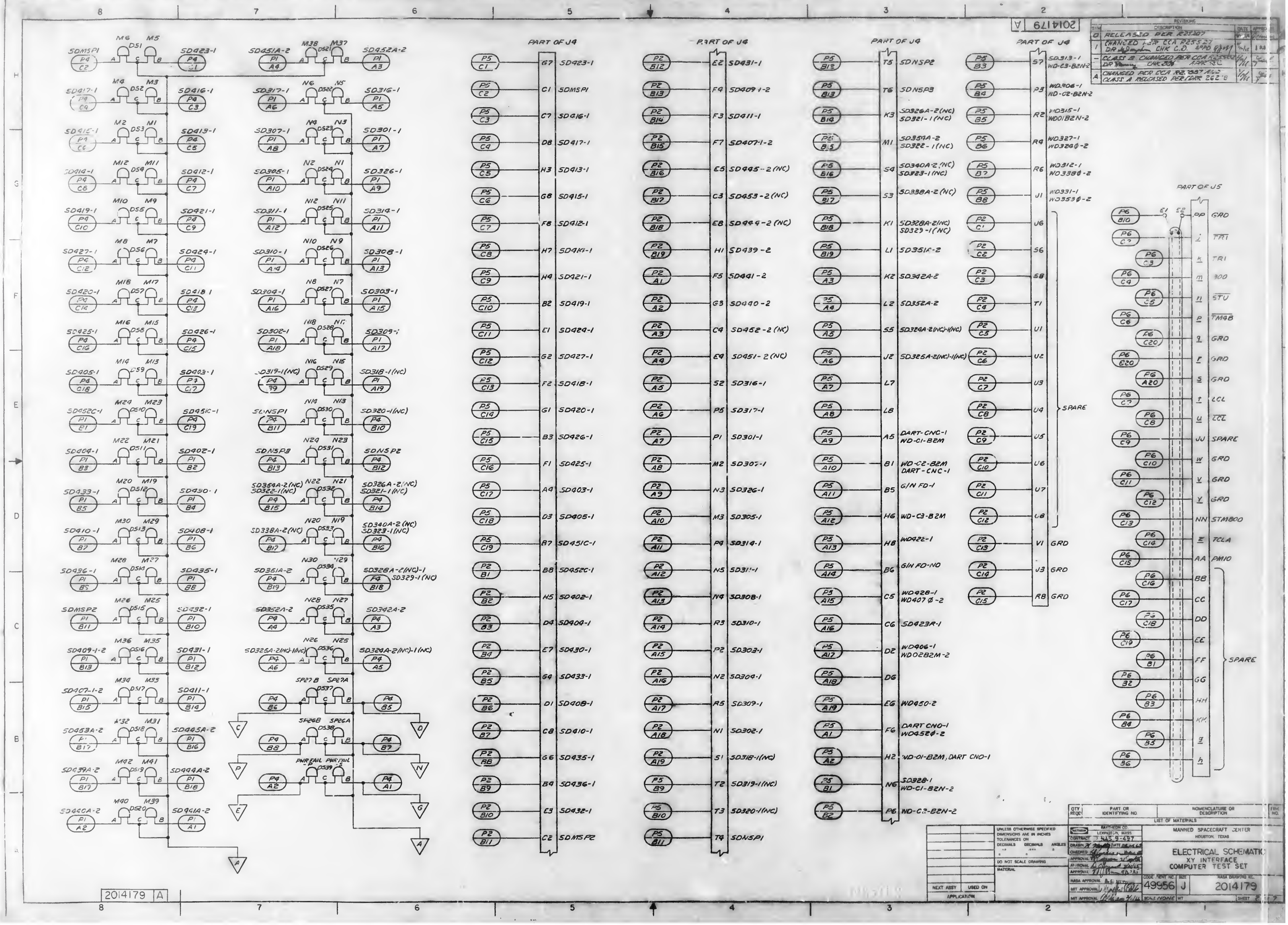
QTY PER	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	RAYTHEON CO. LEXINGTON, MASS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
	CONTRACT NO. NAS 9-457	LIST OF MATERIALS	

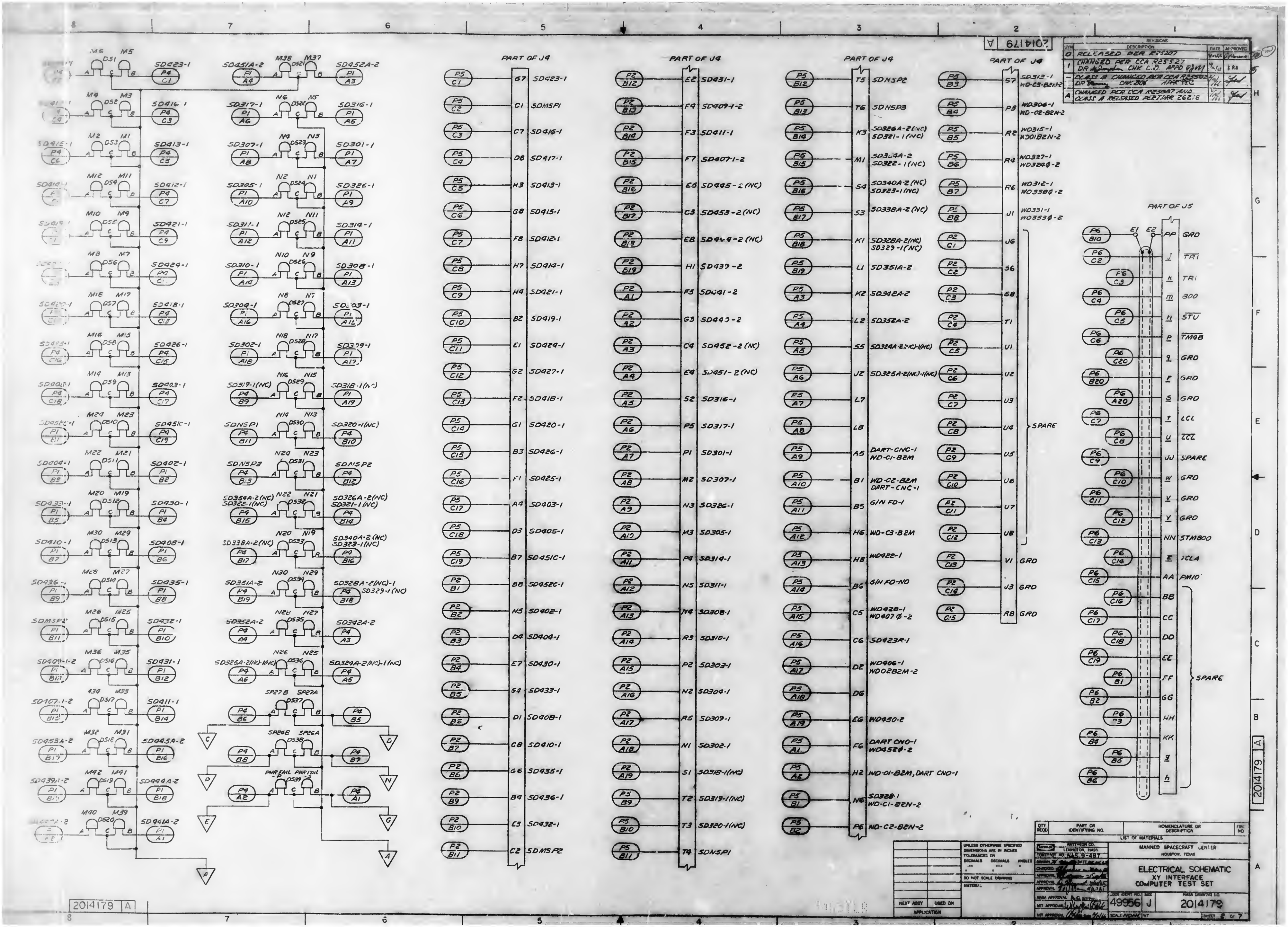
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ANGLES
.x ±.1 ±1°
.xx ±.01
.xxx ±.005
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

DRAWN	DATE 7/26/67
CHECKED	
APPROVAL	
A. TROVA	
APPROVAL	
NASA APPROVAL	
REL APPROVAL	
MFG APPROVAL	

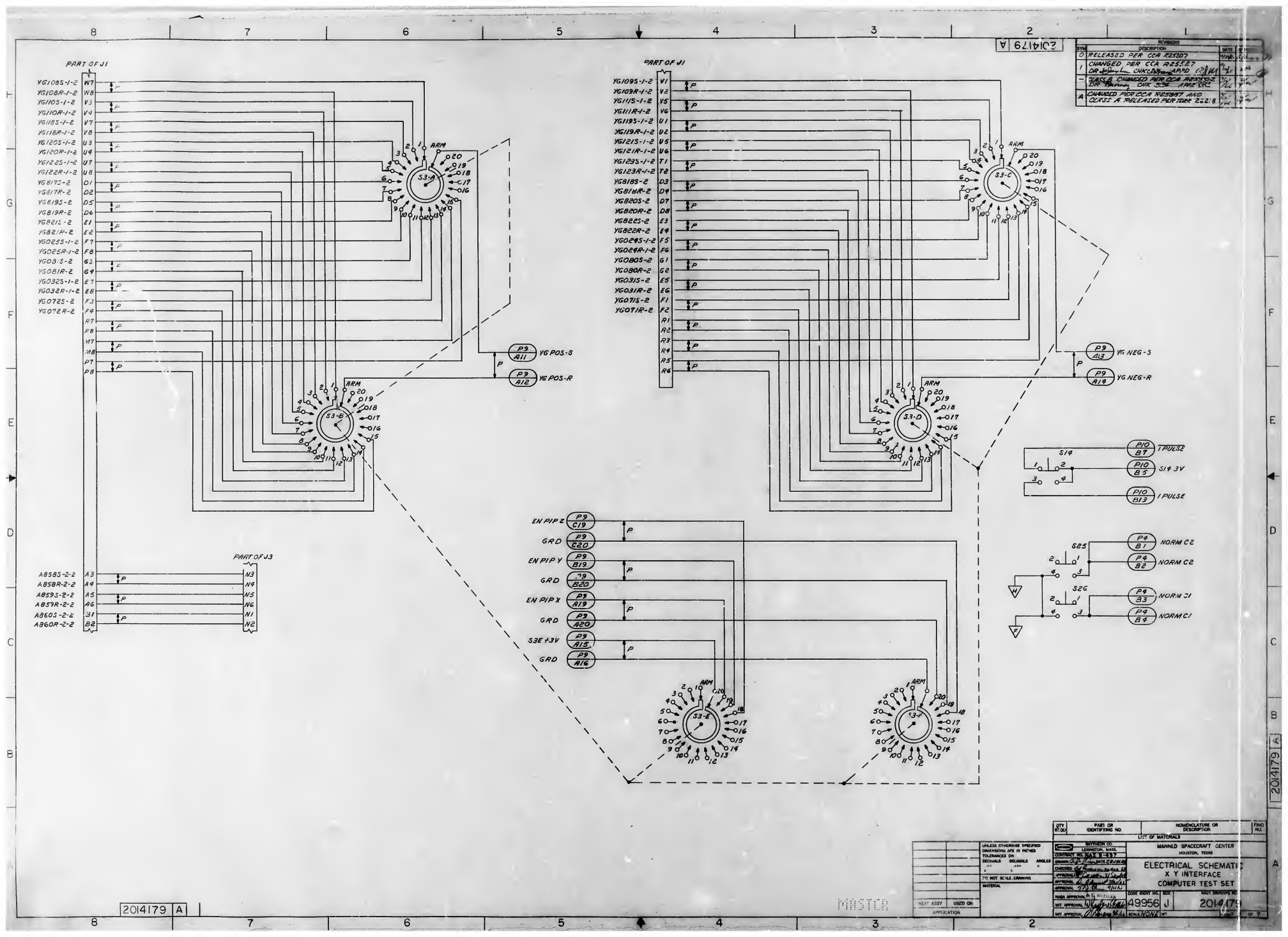
ELECTRICAL SCHEMATIC
X Y INTERFACE
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	J	2014179
SCALE NONE	WT.	SHEET 1 OF 2


2014179 A
PART OF J4
PART OF J4
PART OF J4
PART OF J4
PART OF J5
SPARE
SPARE
REVISIONS
O RELEASED PER R23207
1 CHANGED PER CCA R23521
— CLASS B CHANGED PER CCA
A CHANGED PER CCA R2 397 AND CLASS A RELEASED PER DAR 2628
LIST OF MATERIALS
QTY REQD
PART OR IDENTIFYING NO.
NOMENCLATURE OR DESCRIPTION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY
USED ON
APPLICATION
RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NAS 9-497
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
ELECTRICAL SCHEMATIC
XY INTERFACE
COMPUTER TEST SET
CODE IDENT NO. 49956
SIZE J
NASA DRAWING NO. 2014179
SCALE NONE
2014179 A



2014179 A
REVISIONS
RELEASED PER R25207
CHANGED PER CCA R25527
CLASS A RELEASED PER TARR 26218
PART OF J4
PART OF J5
SPARE
GRD
LIST OF MATERIALS
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
ELECTRICAL SCHEMATIC
XY INTERFACE
COMPUTER TEST SET
NAS 9-497
49956
J
2014179



REVISIONS			
SYM	DESCRIPTION	DATE	APP'D
0	RELEASED PER CCA R25207		
1	CHANGED PER CCA R25827 DR [illegible] CHK [illegible] APP'D		
-	CLASS CHANGED PER CCA R25902 DR [illegible] CHK [illegible] APP'D		
A	CHANGED PER CCA R25987 AND CLASS A RELEASED PER TAPE 2218		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 1-437
DRAWN [illegible] DATE 2/8/66
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ELECTRICAL SCHEMATIC
X Y INTERFACE
COMPUTER TEST SET

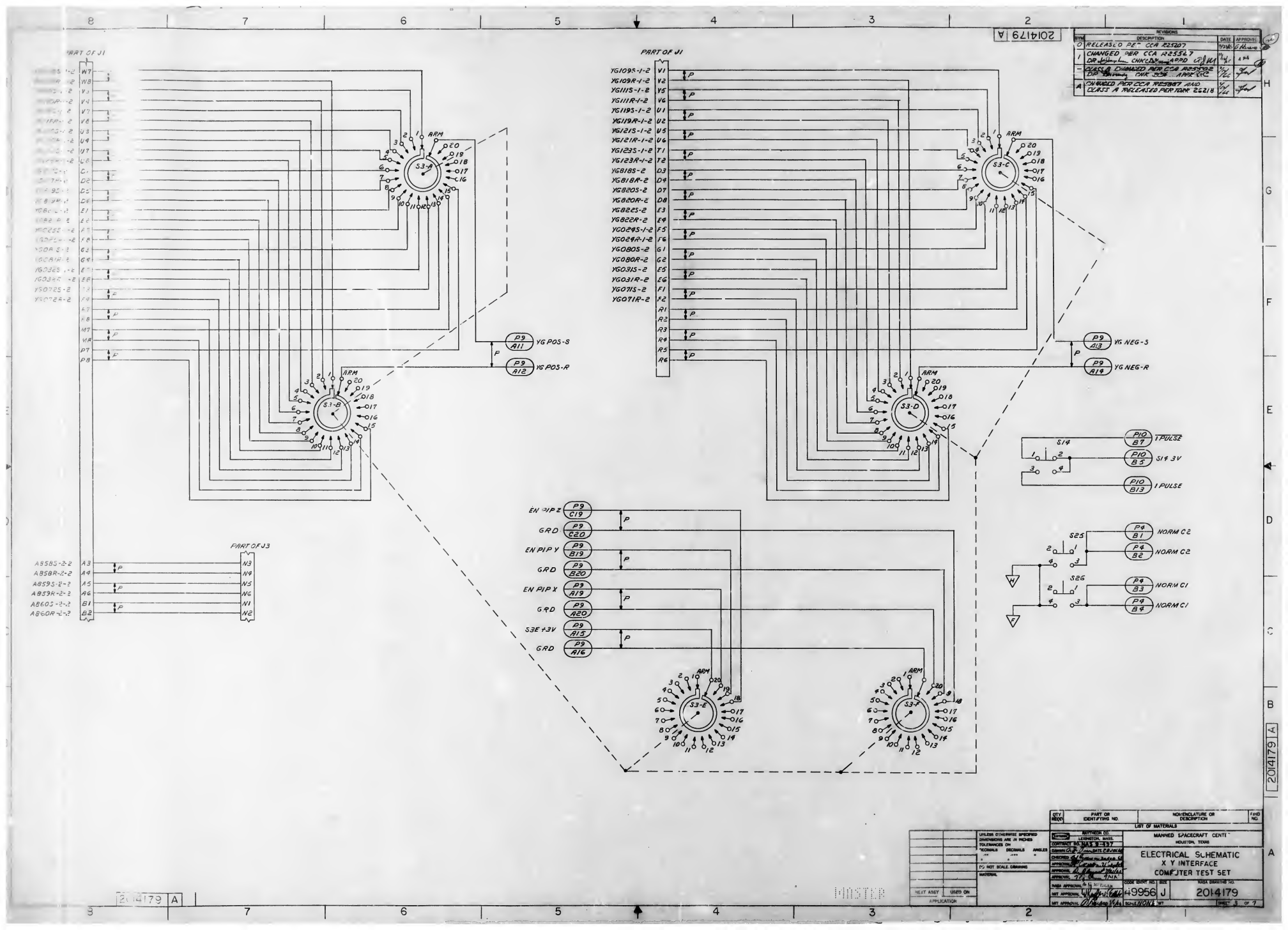
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX .XXX DECIMALS ANGLES
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY USED ON
APPLICATION

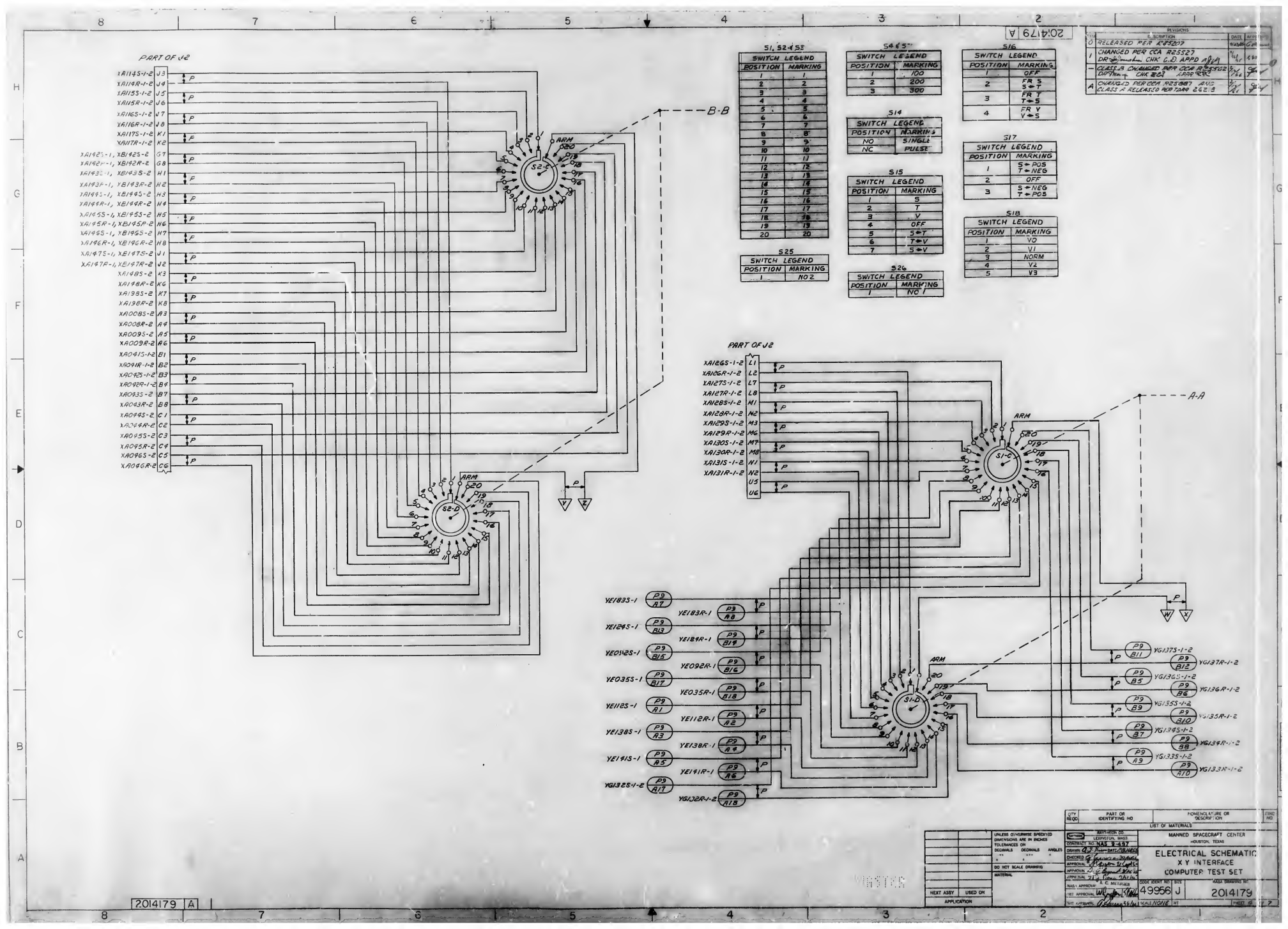
CODE IDENT NO. 49956 SIZE J NASA DRAWING NO. 2014179
SCALE NONE WT SHEET 1 OF 7

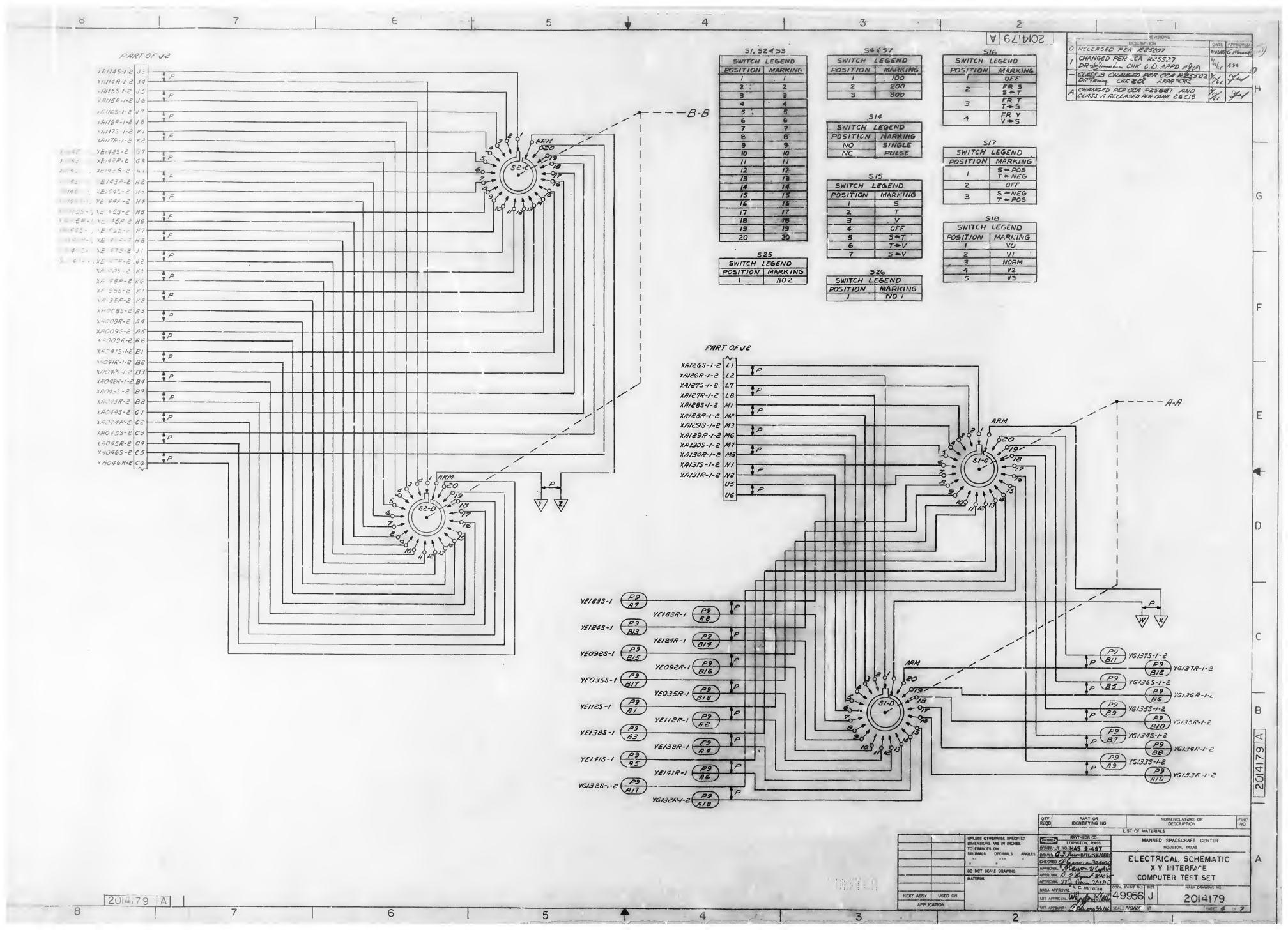
2014179 A

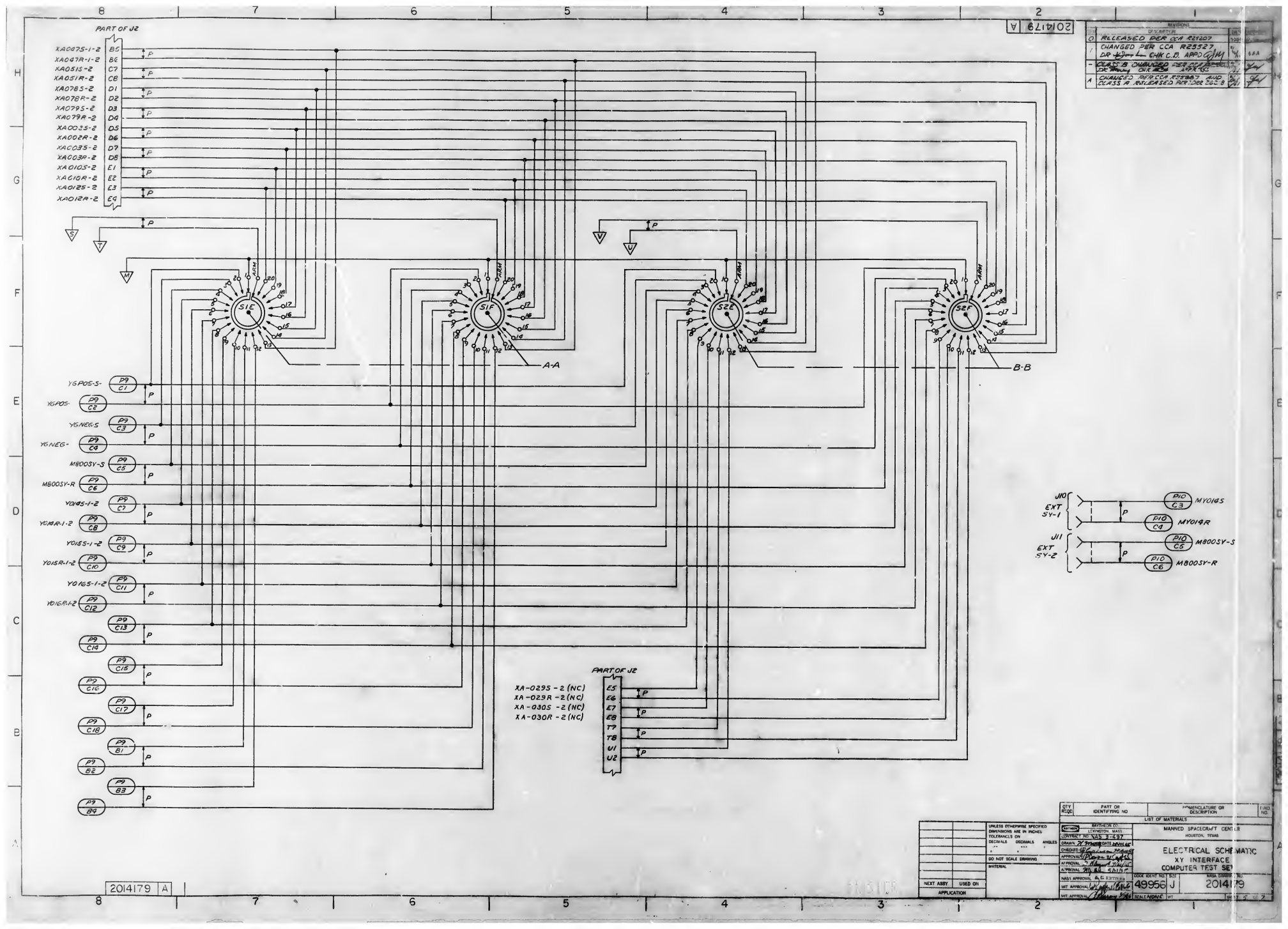
MASTER

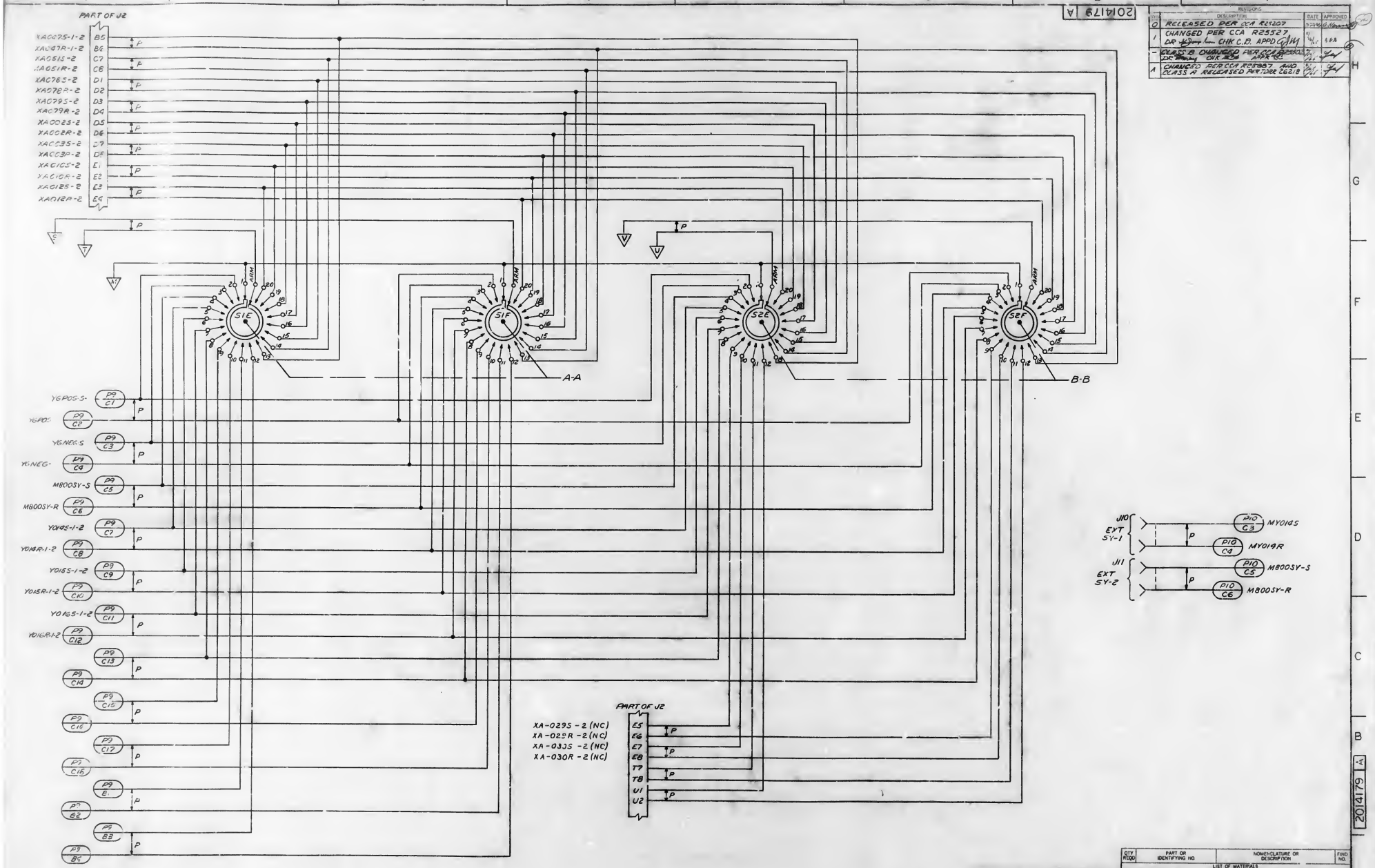
2014179 A


2014179 A
REVISIONS
LTR DESCRIPTION DATE APPROVED
O RELEASED PER CCA R25207
I CHANGED PER CCA R25547
- CLASS A CHANGED PER CCA R25702
A CHANGED PER CCA R25987 AND CLASS A RELEASED PER TANK 22218
PART OF J1
PART OF J3
S3-A
S3-B
S3-C
S3-D
S3-E
S3-F
ARM
S14
S25
S26
YG POS-S
YG POS-R
YG NEG-S
YG NEG-R
1 PULSE
S14 3V
NORM C2
NORM C1
EN PIP Z
EN PIP Y
EN PIP X
GRD
S3E +3V
LIST OF MATERIALS
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
ELECTRICAL SCHEMATIC
X Y INTERFACE
COMPUTER TEST SET
CODE IDENT NO. 49956
SIZE J
2014179
SHEET 3 OF 7
MASTER


PART OF J2
XA114S-1-2 J3
XA114R-1-2 J4
XA115S-1-2 J5
XA115R-1-2 J6
XA116S-1-2 J7
XA116R-1-2 J8
XA117S-1-2 K1
XA117R-1-2 K2
XA192S-1, XB192S-2 G7
XA192R-1, XB192R-2 G8
XA193S-1, XB193S-2 H1
XA193R-1, XB193R-2 H2
XA194S-1, XB194S-2 H3
XA194R-1, XB194R-2 H4
XA195S-1, XB195S-2 H5
XA195R-1, XB195P-2 H6
XA196S-1, XB196S-2 H7
XA196R-1, XB196R-2 H8
XA197S-1, XB197S-2 J1
XA197R-1, XB197R-2 J2
XA198S-2 K3
XA198R-2 K6
XA199S-2 K7
XA199R-2 K8
XA008S-2 A3
XA008R-2 A4
XA009S-2 A5
XA009R-2 A6
XA041S-1-2 B1
XA091R-1-2 B2
XA092S-1-2 B3
XA092R-1-2 B4
XA093S-2 B7
XA093R-2 B8
XA094S-2 C1
XA094R-2 C2
XA095S-2 C3
XA095R-2 C4
XA096S-2 C5
XA046R-2 C6
B-B
S2-E
S2-D
ARM
S1, S2, S3
SWITCH LEGEND
POSITION MARKING
1 1
2 2
3 3
4 4
5 5
6 6
7 7
8 8
9 9
10 10
11 11
12 12
13 13
14 14
15 15
16 16
17 17
18 18
19 19
20 20
S4 & S5
SWITCH LEGEND
POSITION MARKING
1 100
2 200
3 300
S14
SWITCH LEGEND
POSITION MARKING
NO SINGLE
NC PULSE
S15
SWITCH LEGEND
POSITION MARKING
1 S
2 T
3 V
4 OFF
5 S→T
6 T→V
7 S→V
S16
SWITCH LEGEND
POSITION MARKING
1 OFF
2 FR S S→T
3 FR T T→S
4 FR V V→S
S17
SWITCH LEGEND
POSITION MARKING
1 S→POS T→NEG
2 OFF
3 S→NEG T→POS
S18
SWITCH LEGEND
POSITION MARKING
1 VO
2 V1
3 NORM
4 V2
5 V3
S25
SWITCH LEGEND
POSITION MARKING
1 NO 2
S26
SWITCH LEGEND
POSITION MARKING
1 NO 1
PART OF J2
XA126S-1-2 L1
XA126R-1-2 L2
XA127S-1-2 L7
XA127R-1-2 L8
XA128S-1-2 M1
XA128R-1-2 M2
XA129S-1-2 M3
XA129R-1-2 M6
XA130S-1-2 M7
XA130R-1-2 M8
XA131S-1-2 N1
XA131R-1-2 N2
U5
U6
A-A
S1-E
S1-D
YE183S-1 P9 A7
YE183R-1 P9 A8
YE124S-1 P9 B13
YE129R-1 P9 B14
YE092S-1 P9 B15
YE092R-1 P9 B16
YE035S-1 P9 B17
YE035R-1 P9 B18
YE112S-1 P9 A1
YE112R-1 P9 A2
YE138S-1 P9 A3
YE138R-1 P9 A4
YE191S-1 P9 A5
YE191R-1 P9 A6
YG132S-1-2 P9 A17
YG132R-1-2 P9 A18
YG137S-1-2 P9 B11
YG137R-1-2 P9 B12
YG136S-1-2 P9 B5
YG136R-1-2 P9 B6
YG135S-1-2 P9 B9
YG135R-1-2 P9 B10
YG134S-1-2 P9 B7
YG134R-1-2 P9 B8
YG133S-1-2 P9 A9
YG133R-1-2 P9 A10
P
V
Z
W
X
REVISIONS
LTR DESCRIPTION DATE APPROVED
0 RELEASED PER KR5207
1 CHANGED PER CCA R25527 DR CHK C.D. APPD
- CLASS A CHANGED PER CCA R25502 DR CHK APPD
A CHANGED PER CCA R25887 AND CLASS A RELEASED PER TAB 262.8
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .X ± .XX ± .XXX ± ANGLES ° ' " DO NOT SCALE DRAWING MATERIAL
NEXT ASSY USED ON APPLICATION
RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-457
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
N/C MATERIAL
NASA APPROVAL
QRT APPROVAL
MFG APPROVAL
MANNED SPACECRAFT CENTER HOUSTON, TEXAS
ELECTRICAL SCHEMATIC X Y INTERFACE COMPUTER TEST SET
CODE IDENT NO. 49956 SIZE J NASA DRAWING NO. 2014179
SCALE NONE WT SHEET 2 OF 2
2014179 A
LIST OF MATERIALS
QTY REQD PART OR IDENTIFYING NO NOMENCLATURE OR DESCRIPTION ITEM NO


PART OF J2
XA1145-1-2 J3
XH119R-1-2 J4
XA1155-1-2 J5
XA1156-1-2 J6
XA1165-1-2 J7
XA1166-1-2 J8
XA1175-1-2 V1
XA1176-1-2 V2
XE1425-2 G7
XE1426-2 G8
XE1427-2 H1
XE1428-2 H2
XE1429-2 H3
XE1430-2 H4
XE1431-2 H5
XE1432-2 H6
XE1433-2 H7
XE1434-2 H8
XE1435-2 J1
XE1436-2 J2
XA1285-2 K3
XA1286-2 K6
XA1287-2 K7
XA1288-2 K8
XA1289-2 A3
XA1290-2 A4
XA1291-2 A5
XA1292-2 A6
XA1293-2 B1
XA1294-2 B2
XA1295-2 B3
XA1296-2 B4
XA1297-2 B7
XA1298-2 B8
XA1299-2 C1
XA1300-2 C2
XA1301-2 C3
XA1302-2 C4
XA1303-2 C5
XA1304-2 C6
ARM
S2-C
S2-D
B-B
S1, S2 & S3
SWITCH LEGEND
POSITION MARKING
1 1
2 2
3 3
4 4
5 5
6 6
7 7
8 8
9 9
10 10
11 11
12 12
13 13
14 14
15 15
16 16
17 17
18 18
19 19
20 20
S4 & S7
SWITCH LEGEND
POSITION MARKING
1 100
2 200
3 300
S14
SWITCH LEGEND
POSITION MARKING
NO SINGLE
NC PULSE
S15
SWITCH LEGEND
POSITION MARKING
1 S
2 T
3 V
4 OFF
5 S⇔T
6 T⇔V
7 S⇔V
S25
SWITCH LEGEND
POSITION MARKING
1 NO2
S26
SWITCH LEGEND
POSITION MARKING
1 NO1
S16
SWITCH LEGEND
POSITION MARKING
1 OFF
2 FR S S⇔T
3 FR T T⇔S
4 FR V V⇔S
S17
SWITCH LEGEND
POSITION MARKING
1 S⇔POS T⇔NEG
2 OFF
3 S⇔NEG T⇔POS
S18
SWITCH LEGEND
POSITION MARKING
1 V0
2 V1
3 NORM
4 V2
5 V3
PART OF J2
XA1265-1-2 L1
XA1266-1-2 L2
XA1275-1-2 L7
XA1276-1-2 L8
XA1285-1-2 M1
XA1286-1-2 M2
XA1295-1-2 M3
XA1296-1-2 M6
XA1305-1-2 M7
XA1306-1-2 M8
XA1315-1-2 N1
XA1316-1-2 N2
U5
U6
A-A
S1-C
S1-D
YE1835-1 P9 A7
YE183R-1 P9 A8
YE1245-1 P9 B13
YE189R-1 P9 B14
YE0925-1 P9 B15
YE092R-1 P9 B16
YE0355-1 P9 B17
YE035R-1 P9 B18
YE1125-1 P9 A1
YE112R-1 P9 A2
YE1385-1 P9 A3
YE138R-1 P9 A4
YE1915-1 P9 A5
YE191R-1 P9 A6
YG1325-1-2 P9 A17
YG132R-1-2 P9 A18
YG1375-1-2 P9 B11
YG137R-1-2 P9 B12
YG1365-1-2 P9 B5
YG136R-1-2 P9 B6
YG1355-1-2 P9 B9
YG135R-1-2 P9 B10
YG1345-1-2 P9 B7
YG134R-1-2 P9 B8
YG1335-1-2 P9 A9
YG133R-1-2 P9 A10
W
X
Y
Z
REVISIONS
0 RELEASED PER RE85207 4/23/65 G.Kleinhans
1 CHANGED PER SCA RE85237 DR Simulation CHK C.D. APPD 4/14 5/4/65 K.R.B.
- CLASS 3 CHANGED PER CCA RE85302 DR Planning CHK BCH APPD RRC 5/26/65 Stanley
A CHANGED PER CCA RE85387 AND CLASS A RELEASED PER SNR 66218 2/11/66 Stanley
2014179 A
2014179 A
LIST OF MATERIALS
QTY REQD | PART OR IDENTIFYING NO | NOMENCLATURE OR DESCRIPTION | FIND NO
RAYTHEON CO. LEXINGTON, MASS.
MANNED SPACECRAFT CENTER HOUSTON, TEXAS
CONTRACT NO. NAS 9-497
DRAWN G.J. Ryan DATE 2/11/66
CHECKED G. Kleinhans 2/11/66
APPROVAL C.D. Ryan 2/11/66
APPROVAL R.T. Green 2/11/66
NASA APPROVAL W.C. Meyer 2/11/66
MIT APPROVAL W.E. Lee 2/11/66
MIT APPROVAL R. Edwards 2/11/66
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .xx .xxx ANGLES ° ' "
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY USED ON APPLICATION
ELECTRICAL SCHEMATIC X Y INTERFACE COMPUTER TEST SET
CODE IDENT NO. 49956 SIZE J
NASA DRAWING NO. 2014179
SCALE NONE
SHEET 1 OF 7
2014179 A


PART OF J2
XA007S-1-2 B5
XA007R-1-2 B6
XA051S-2 C7
XA051R-2 C8
XA078S-2 D1
XA078R-2 D2
XA079S-2 D3
XA079R-2 D4
XA003S-2 D5
XA002R-2 D6
XA003S-2 D7
XA003R-2 D8
XA010S-2 E1
XA010R-2 E2
XA012S-2 E3
XA012R-2 E4
P
S1E
S1F
S2E
S2F
ARM
A-A
B-B
YGP0S-S- P9 C1
YGP0S- P9 C2
YGNEGS P9 C3
YGNEG- P9 C4
M800SY-S P9 C5
M800SY-R P9 C6
YO14S-1-2 P9 C7
YO14R-1-2 P9 C8
YO15S-1-2 P9 C9
YO15R-1-2 P9 C10
YO16S-1-2 P9 C11
YO16R-1-2 P9 C12
P9 C13
P9 C14
P9 C15
P9 C16
P9 C17
P9 C18
P9 B1
P9 B2
P9 B3
P9 B4
J10 EXT SY-1
P10 C3 MY014S
P10 C4 MY014R
J11 EXT SY-2
P10 C5 M800SY-S
P10 C6 M800SY-R
PART OF J2
XA-029S-2 (NC) E5
XA-029R-2 (NC) E6
XA-030S-2 (NC) E7
XA-030R-2 (NC) E8
T7
T8
U1
U2
REVISIONS
O RELEASED PER CCA R25207
1 CHANGED PER CCA R25327
- CLASS B CHANGED PER CCA R25867
A CHANGED PER CCA R25867 AND CLASS A RELEASED PART DOC SET B
2014179 A
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx .xxx ANGLES °
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY
USED ON
APPLICATION
QTY REQ
PART OR IDENTIFYING NO
NOMENCLATURE OR DESCRIPTION
ITEM NO
LIST OF MATERIALS
RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO NAS 9-697
DRAWN
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MANNED SPACECRAFT CENTER HOUSTON, TEXAS
ELECTRICAL SCHEMATIC XY INTERFACE COMPUTER TEST SET
CODE IDENT NO 49956
SIZE J
DRAWING NO 2014179
SCALE NONE
WT
SHT 2 OF 2
2014179 A



REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25207	5-23-66	
1	CHANGED PER CCA R25527 DR ~~Dwg~~ from CHK C.D. APPD C/M	9/1/66	
-	CLASS B CHANGED PER CCA R26063 DR ~~Dwg~~ ONLY ADR 1C	12/1/66	
A	CHANGED PER CCA R28867 AND CLASS A RELEASED PER TOR 26218	9/1/67	

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx .xxx ANGLES °
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

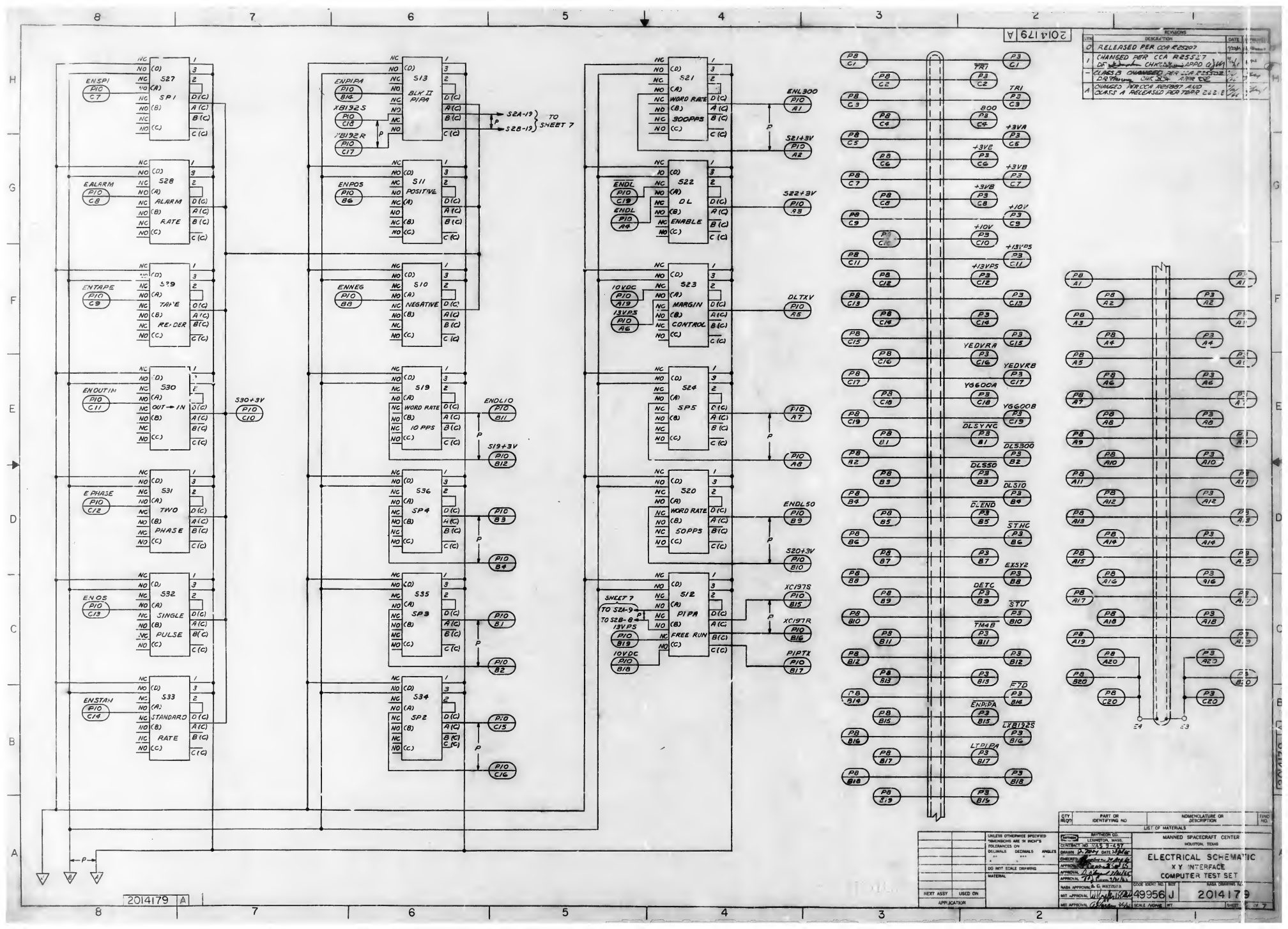
RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN JF 7/7/66 DATE 5/23/66
CHECKED CF 7/7/66
APPROVAL Phyllis M Craft 7/7/66
APPROVAL D.Ho 7/7/66
APPROVAL 7/7/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

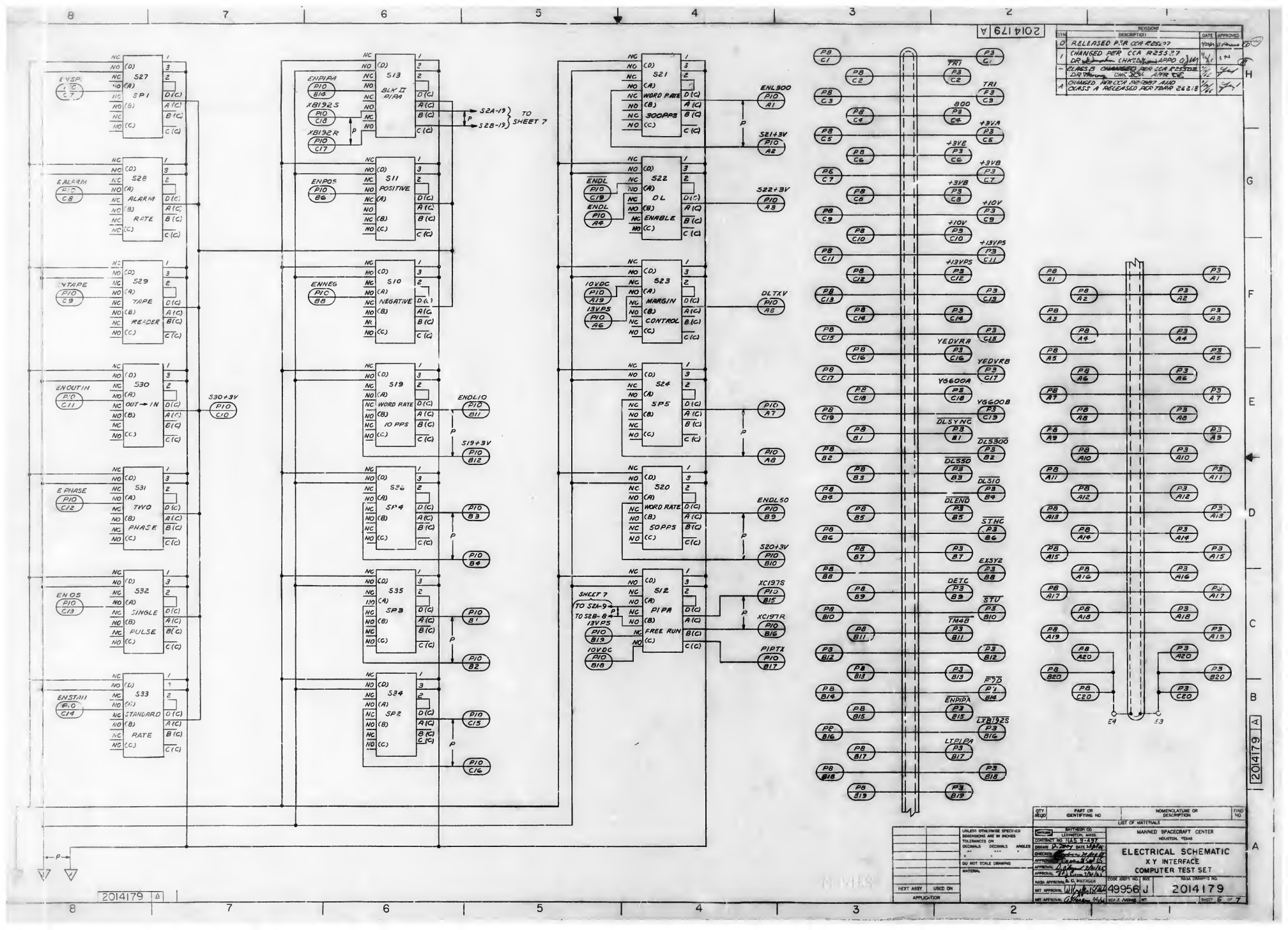
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

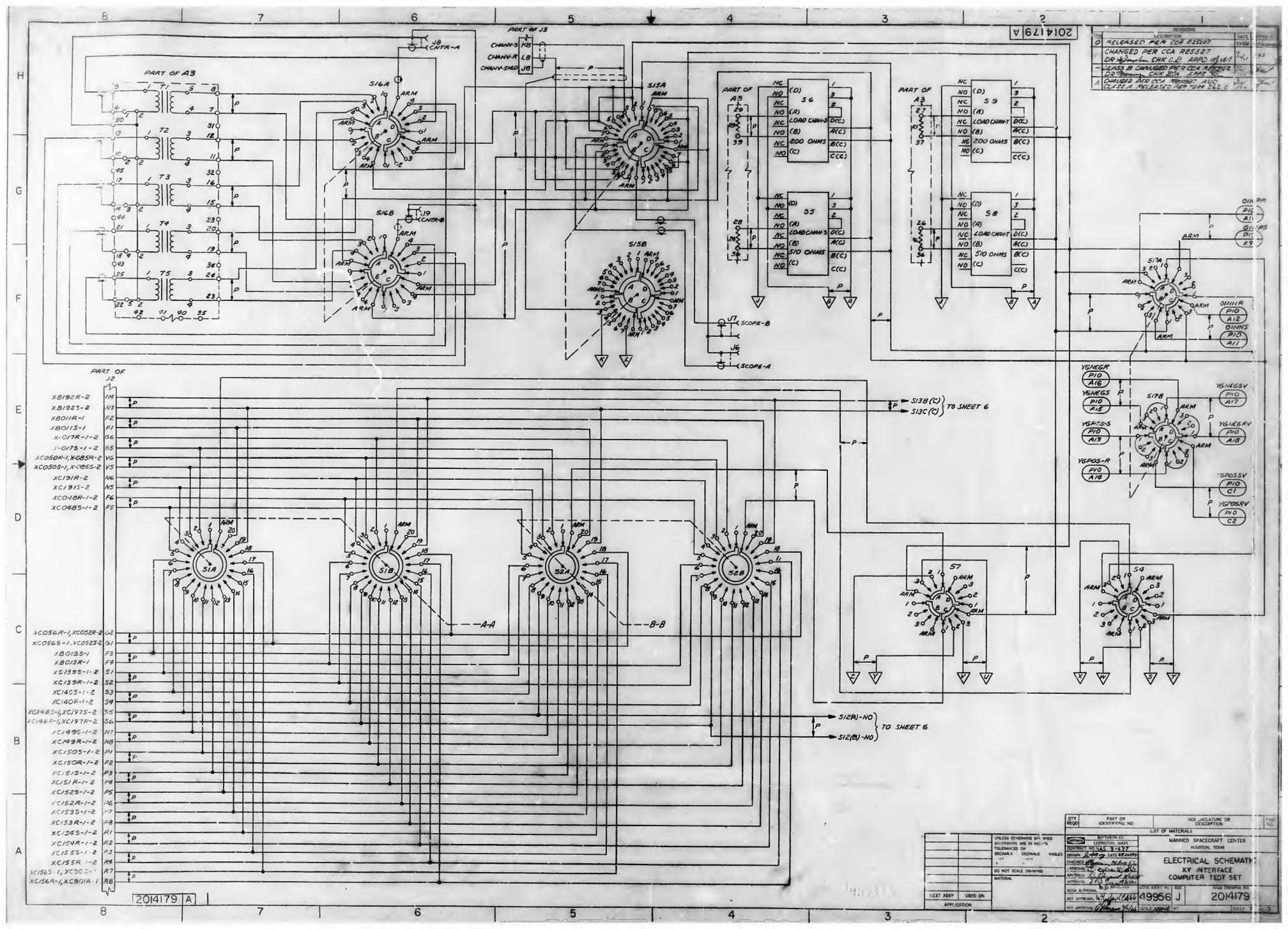
ELECTRICAL SCHEMATIC
XY INTERFACE
COMPUTER TEST SET

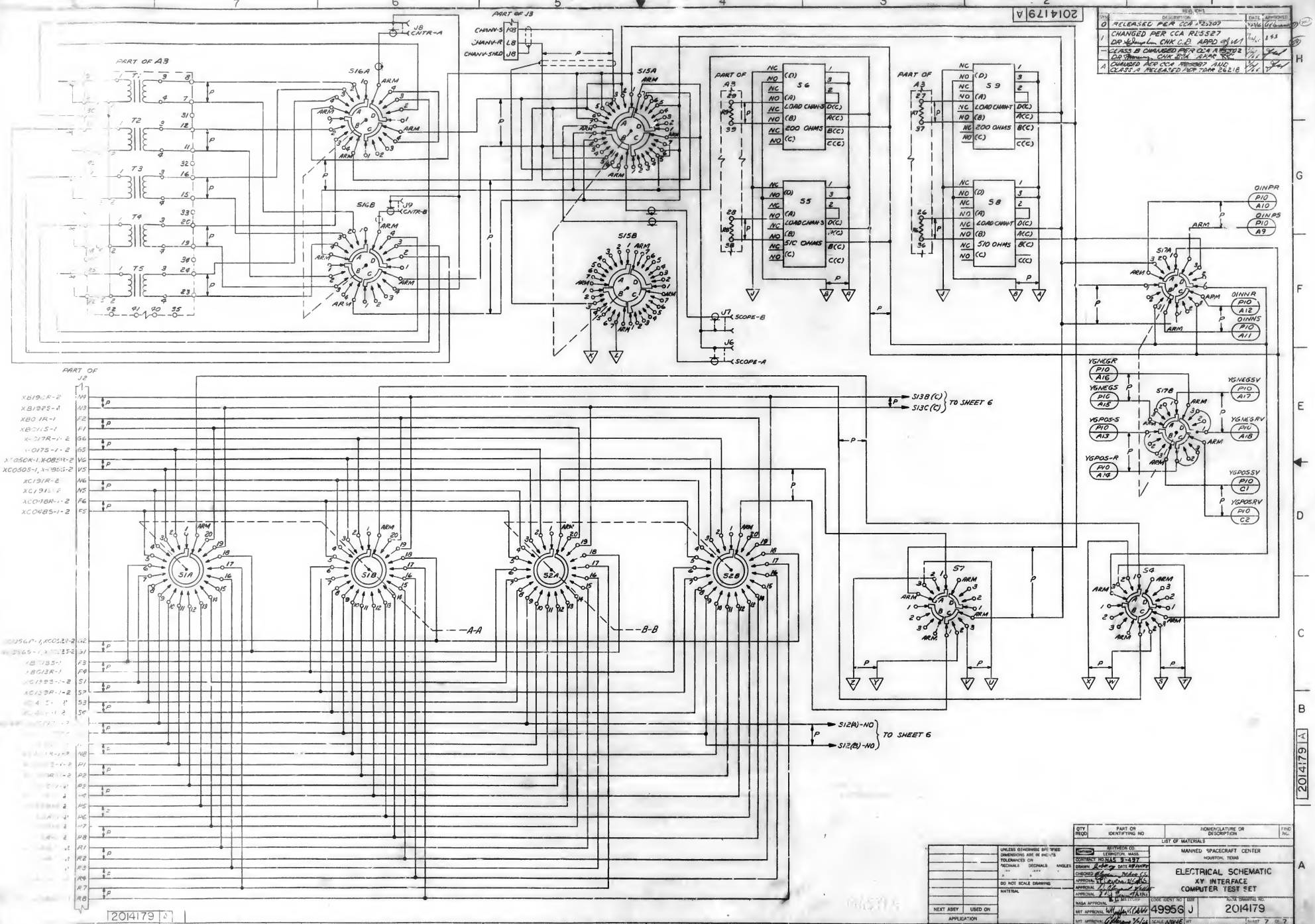
CODE IDENT NO 49956 | SIZE J | NASA DRAWING NO. 2014179
SCALE NONE | WT | SHEET 1 OF 2

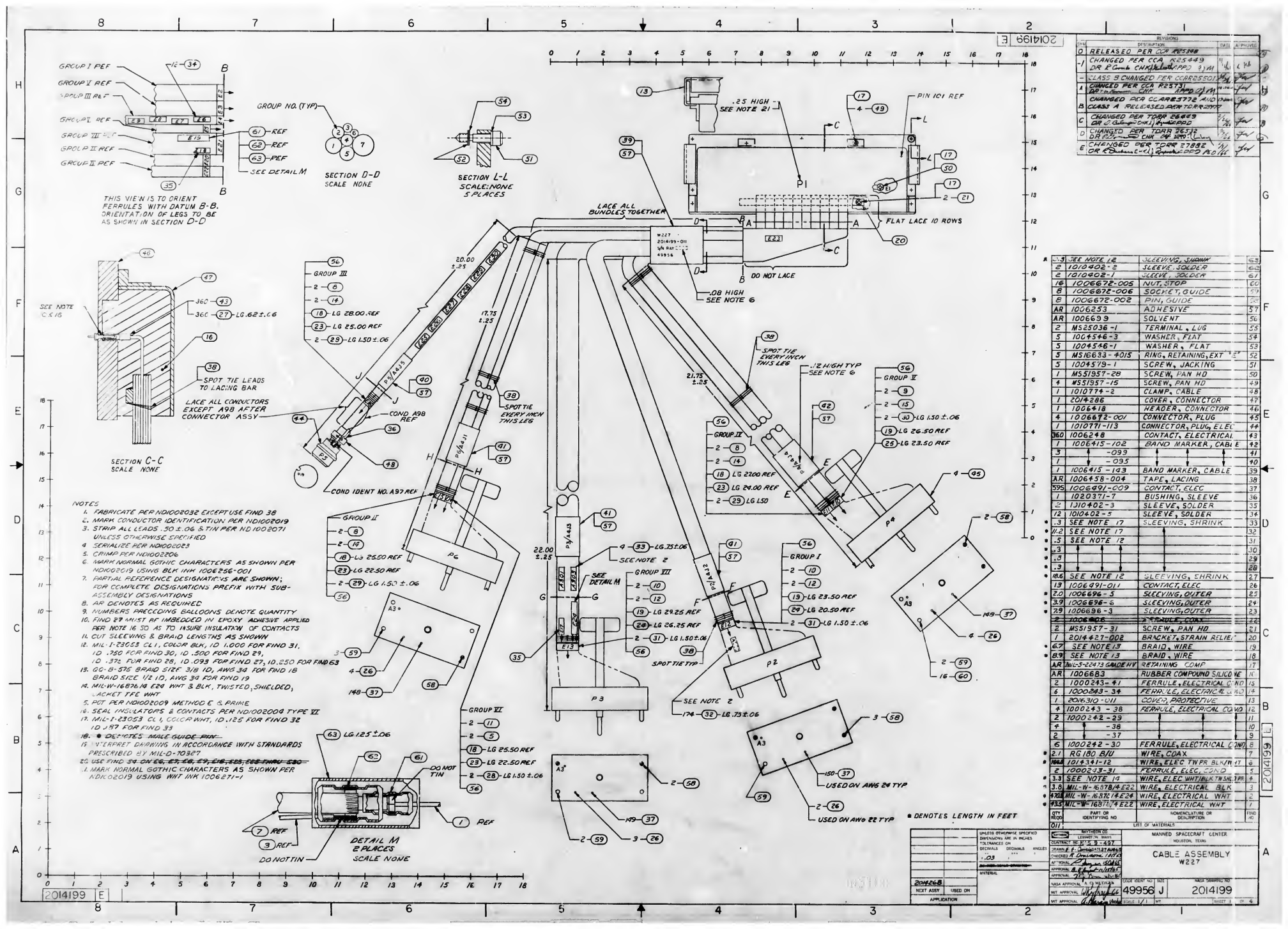
2014179 A


2014179 A
REVISIONS
SYM DESCRIPTION DATE
0 RELEASED PER CCA R25207
1 CHANGED PER CCA R25527
- CLASS B CHANGED PER CCA R25302
A CHANGED PER CCA R25987 AND CLASS A RELEASED PER TDRR 282 B
ENSPI P10 C7
S27 SPI
NC (D) NO (A) NC (B) NO (C)
D(C) A(C) B(C) C(C)
EALARM P10 C8
S28 ALARM RATE
ENTAPE P10 C9
S29 TAPE READER
ENOUTIN P10 C11
S30 OUT → IN
S30+3V P10 C10
EPHASE P10 C12
S31 TWO PHASE
ENOS P10 C13
S32 SINGLE PULSE
ENSTAN P10 C14
S33 STANDARD RATE
ENPIPA P10 B16
XB192S P10 C18
YB192R P10 C17
S13 BLK II PIPA
S2A-19
S2B-19
TO SHEET 7
ENPOS P10 B6
S11 POSITIVE
ENNEG P10 B8
S10 NEGATIVE
S19 WORD RATE 10 PPS
ENDL10 P10 B11
S19+3V P10 B12
S36 SP4
P10 B3
P10 B4
S35 SP3
P10 B1
P10 B2
S34 SP2
P10 C15
P10 C16
ENL300 P10 A1
S21 WORD RATE 300PPS
S21+3V P10 A2
ENDL P10 C19
ENDL P10 A4
S22 DL ENABLE
S22+3V P10 A3
10VDC P10 A19
13VPS P10 A6
S23 MARGIN CONTROL
DLTKV P10 A5
S24 SP5
P10 A7
P10 A8
S20 WORD RATE 50PPS
ENDL50 P10 B9
S20+3V P10 B10
SHEET 7
TO S2A-9
TO S2B-8
13VPS P10 B19
10VDC P10 B18
S12 PIPA FREE RUN
XC197S P10 B15
XC197R P10 B16
PIPTX P10 B17
P8 C1 P3 C1 TRI
P8 C2 P3 C2 TRI
P8 C3 P3 C3 800
P8 C4 P3 C4 +3VA
P8 C5 P3 C5 +3VE
P8 C6 P3 C6 +3VB
P8 C7 P3 C7 +3VB
P8 C8 P3 C8 +10V
P8 C9 P3 C9 +10V
P8 C10 P3 C10 +13VDS
P8 C11 P3 C11 +13VPS
P8 C12 P3 C12
P8 C13 P3 C13
P8 C14 P3 C14
P8 C15 P3 C15 YEDVRA
P8 C16 P3 C16 YEDVRB
P8 C17 P3 C17 YG600A
P8 C18 P3 C18 YG600B
P8 C19 P3 C19 DLSYNC
P8 B1 P3 B1 DLS300
P8 B2 P3 B2 DLS50
P8 B3 P3 B3 DLS10
P8 B4 P3 B4 DLEND
P8 B5 P3 B5 STHC
P8 B6 P3 B6
P8 B7 P3 B7 EXSY2
P8 B8 P3 B8 DETC
P8 B9 P3 B9 STU
P8 B10 P3 B10 TM48
P8 B11 P3 B11
P8 B12 P3 B12
P8 B13 P3 B13 E7D
P8 B14 P3 B14 ENPIPA
P8 B15 P3 B15 LXB192S
P8 B16 P3 B16 LTPIPA
P8 B17 P3 B17
P8 B18 P3 B18
P8 B19 P3 B19
P8 A1 P3 A1
P8 A2 P3 A2
P8 A3 P3 A3
P8 A4 P3 A4
P8 A5 P3 A5
P8 A6 P3 A6
P8 A7 P3 A7
P8 A8 P3 A8
P8 A9 P3 A9
P8 A10 P3 A10
P8 A11 P3 A11
P8 A12 P3 A12
P8 A13 P3 A13
P8 A14 P3 A14
P8 A15 P3 A15
P8 A16 P3 A16
P8 A17 P3 A17
P8 A18 P3 A18
P8 A19 P3 A19
P8 A20 P3 A20
P8 B20 P3 B20
P8 C20 P3 C20
E4
E3
LIST OF MATERIALS
QTY REQD
PART OR IDENTIFYING NO.
NOMENCLATURE OR DESCRIPTION
FIND NO.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH'S TOLERANCES ON DECIMALS .XX .XXX ANGLES ° ' "
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY USED ON
APPLICATION
RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN P. Perry DATE 3/26/65
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL R. G. MATTHEWS
MIT APPROVAL
MIL APPROVAL
MANNED SPACECRAFT CENTER HOUSTON, TEXAS
ELECTRICAL SCHEMATIC
XY INTERFACE COMPUTER TEST SET
CODE IDENT NO. 49956
SIZE J
NASA DRAWING NO. 2014179
SCALE NONE WT
SHEET 1 OF 7
2014179 A


2014179 A
REVISIONS
DESCRIPTION
DATE
APPROVED
RELEASED PER CCA R253.27
CHANGED PER CCA R253.27
CLASS B CHANGED PER CCA R253.27
CHANGED PER CCA R253.27 AND CLASS A RELEASED PER TDAR 26218
S27 SP1
S28
S29 TAPE READER
S30
S31 TWO PHASE
S32 SINGLE PULSE
S33 STANDARD RATE
S13 BLK II PIPA
S11 POSITIVE
S10 NEGATIVE
S19 WORD RATE 10 PPS
S26 SP4
S35 SP3
S34 SP2
S21 WORD RATE 300PPS
S22 DL ENABLE
S23 MARGIN CONTROL
S24 SP5
S20 WORD RATE 50PPS
S12 PIPA FREE RUN
TO SHEET 7
S30+3V
S19+3V
S20+3V
S21+3V
S22+3V
DLTXV
PIPTX
ENDL10
ENDL50
ENL300
XC197S
XC197R
TRI
800
+3VA
+3VE
+3VB
+10V
+13VPS
YEDVRA
YEDVRB
Y6600A
Y6600B
DLSYNC
DLS300
DLS50
DLS10
DLENO
STHC
EXSY2
DETC
STU
TM48
ENPIPA
LYB192S
LTPIPA
E4
E3
LIST OF MATERIALS
QTY REQD
PART OR IDENTIFYING NO
NOMENCLATURE OR DESCRIPTION
FIND NO
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS DECIMALS ANGLES
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY
USED ON
APPLICATION
BAYMEON CO
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN
CHECKED
APPROVAL
NASA APPROVAL
MIT APPROVAL
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
ELECTRICAL SCHEMATIC
XY INTERFACE
COMPUTER TEST SET
CODE IDENT NO.
SIZE
49956
J
NASA DRAWING NO.
2014179
SCALE
WT
SHEET 6 OF 7
2014179 A


2014179 A
REVISIONS
DESCRIPTION
RELEASED PER CCA R25507
CHANGED PER CCA R25527
CLASS B CHANGED PER CCA R25702
CHANGED PER CCA R25907 AND CLASS A RELEASED PER CCA R26282
PART OF A3
PART OF J2
PART OF J3
CHANN-S K8
CHANN-R L8
CHANN-SHLD J8
J8 CNTR-A
J9 CNTR-B
S16A
S16B
S15A
S15B
S1A
S1B
S2A
S2B
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
S17A
S17B
T1
T2
T3
T4
T5
J7 SCOPE-B
J6 SCOPE-A
ARM
LOAD CHANN-T
200 OHMS
510 OHMS
XB192R-2
XB193S-2
XB011R-1
XB011S-1
X-017R-1-2
J-017S-1-2
XC050R-1, X-085R-2
XC050S-1, X-085S-2
XC191R-2
XC191S-2
XC048R-1-2
XC048S-1-2
XC056R-1, XC052R-2
XC056S-1, XC052S-2
XB0135-1
XB013R-1
XC139S-1-2
XC139R-1-2
XC140S-1-2
XC140R-1-2
XC148S-1, XC197S-2
XC148R-1, XC197R-2
XC149S-1-2
XC149R-1-2
XC150S-1-2
XC150R-1-2
XC151S-1-2
XC151R-1-2
XC152S-1-2
XC152R-1-2
XC153S-1-2
XC153R-1-2
XC154S-1-2
XC154R-1-2
XC155S-1-2
XC155R-1-2
XC156S-1, XC901C-1
XC156R-1, XC901R-1
A-A
B-B
S13B(C)
S13C(C)
TO SHEET 6
S12A)-NO
S12(B)-NO
TO SHEET 6
YGNEGR P10 A16
YGNEGS P10 A15
YGPOS-S P10 A19
YGPOS-R P10 A18
YGNEGSV P10 A17
YGNEGRV P10 A18
YGPOSV P10 C1
YGPOSRV P10 C2
OINNR P10 A12
OINNS P10 A11
LIST OF MATERIALS
RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-427
MANNED SPACECRAFT CENTER HOUSTON, TEXAS
ELECTRICAL SCHEMATIC XY INTERFACE COMPUTER TEST SET
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .xx .xxx ANGLES
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY
USED ON
APPLICATION
CODE IDENT NO. 49956
SIZE J
NASA DRAWING NO. 2014179
SCALE NONE
SHEET 7
2014179 A


2014179 A
REVISIONS
0 RELEASED PER CCA #55207
1 CHANGED PER CCA #55527
CLASS B CHANGED PER CCA #55792
CLASS A RELEASED PER TDAR 26218
PART OF A3
PART OF J3
CHANN-S
CHANN-R
CHANN-SHLD
J8 CNTR-A
J9 CNTR-B
S16A
S16B
S15A
S15B
S6
S5
S9
S8
200 OHMS
510 OHMS
LOAD CHANN-S
LOAD CHANN-R
S17A
S17B
S1A
S1B
S2A
S2B
S7
S4
J7 SCOPE-B
J6 SCOPE-A
A-A
B-B
S13B(C)
S13C(C)
TO SHEET 6
S12(A)-NO
S12(B)-NO
TO SHEET 6
PART OF J2
QINPR
QINPS
QINNR
QINNS
YGNEGR
YGNEGS
YGNEGSV
YGNEGRV
YGPOS-S
YGPOS-R
YGPOSSV
YGPOSRV
LIST OF MATERIALS
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
ELECTRICAL SCHEMATIC
XY INTERFACE
COMPUTER TEST SET
CODE IDENT NO. 49956
SIZE J
2014179
SCALE NONE
SHEET 7 OF 7
2014179 A



NOTES

1. FABRICATE PER ND1002032 EXCEPT USE FIND 38
2. MARK CONDUCTOR IDENTIFICATION PER ND1002019
3. STRIP ALL LEADS .50 ±.06 & TIN PER ND 1002071 UNLESS OTHERWISE SPECIFIED
4. SERIALIZE PER ND1002023
5. CRIMP PER ND1002206
6. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLK INK 1006256-001
7. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS PREFIX WITH SUB-ASSEMBLY DESIGNATIONS
8. AR DENOTES AS REQUIRED
9. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
10. FIND 39 MUST BE IMBEDDED IN EPOXY ADHESIVE APPLIED PER NOTE 16 SO AS TO INSURE INSULATION OF CONTACTS
11. CUT SLEEVING & BRAID LENGTHS AS SHOWN
12. MIL-I-23053 CL I, COLOR BLK, ID 1.000 FOR FIND 31, ID .750 FOR FIND 30, ID .500 FOR FIND 29, ID .312 FOR FIND 28, ID .098 FOR FIND 27, ID.250 FOR FIND 63
13. GG-B-575 BRAID SIZE 3/8 ID, AWG 30 FOR FIND 18 BRAID SIZE 1/2 ID, AWG 34 FOR FIND 19
14. MIL-W-16878/4 E24 WHT & BLK, TWISTED, SHIELDED, JACKET TFE WHT
15. POT PER ND1002009 METHOD E & PRIME
16. SEAL INSULATORS & CONTACTS PER ND1002004 TYPE VI
17. MIL-I-23053 CL I, COLOR WHT, ID .125 FOR FIND 32 ID .187 FOR FIND 33
18. * DENOTES MALE GUIDE PIN
19. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
20. USE FIND 39 ON E6, E7, E8, E9, E16, E25, E26 THRU E30
21. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHT INK 1006271-1

ITEM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25308		
-1	CHANGED PER CCA R25449 DR P. Cook CHK [illegible] APPD 9/1/M		
-	CLASS B CHANGED PER CCAR25501		
A	CHANGED PER CCA R25731 DR [illegible] CHK APPD		
B	CHANGED PER CCAR25772 AND CLASS A RELEASED PER TDRR 20749		
C	CHANGED PER TDRR 26469 DR [illegible] CHK [illegible] APPD 2/20		
D	CHANGED PER TDRR 26532 DR [illegible] CHK [illegible] APPD 2/20		
E	CHANGED PER TDRR 27892 DR [illegible] CHK [illegible] APPD 7/11		

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
011		LIST OF MATERIALS	
63	SEE NOTE 12	SLEEVING, SHRINK	63
62	1010402-2	SLEEVE, SOLDER	62
61	1010402-1	SLEEVE, SOLDER	61
60	1006672-005	NUT, STOP	60
59	1006672-006	SOCKET, GUIDE	59
58	1006672-002	PIN, GUIDE	58
57	AR 1006253	ADHESIVE	57
56	AR 1006699	SOLVENT	56
55	2 MS25036-1	TERMINAL, LUG	55
54	5 1004546-3	WASHER, FLAT	54
53	5 1004546-1	WASHER, FLAT	53
52	5 MS16633-4015	RING, RETAINING, EXT	52
51	5 1004579-1	SCREW, JACKING	51
50	1 MS51957-28	SCREW, PAN HD	50
49	4 MS51957-15	SCREW, PAN HD	49
48	1 1010774-2	CLAMP, CABLE	48
47	1 2014286	COVER, CONNECTOR	47
46	1 1006418	HEADER, CONNECTOR	46
45	4 1006672-001	CONNECTOR, PLUG	45
44	1 1010771-113	CONNECTOR, PLUG, ELEC	44
43	360 1006248	CONTACT, ELECTRICAL	43
42	1 1006415-102	BAND MARKER, CABLE	42
41	3 -099		41
40	1 -095		40
39	1 1006415-143	BAND MARKER, CABLE	39
38	AR 1006458-004	TAPE, LACING	38
37	595 1006691-009	CONTACT, ELEC	37
36	1 1020371-7	BUSHING, SLEEVE	36
35	2 1310402-3	SLEEVE, SOLDER	35
34	12 1010402-5	SLEEVE, SOLDER	34
33	* .3 SEE NOTE 17	SLEEVING, SHRINK	33
32	* 11.2 SEE NOTE 17		32
31	* .5 SEE NOTE 12		31
30	* .3		30
29	* .3		29
28	* .3		28
27	* 18.6 SEE NOTE 12	SLEEVING, SHRINK	27
26	19 1006491-011	CONTACT, ELEC	26
25	* 2.0 1006696-5	SLEEVING, OUTER	25
24	* 3.9 1006696-6	SLEEVING, OUTER	24
23	* 29 1006696-3	SLEEVING, OUTER	23
22	~~2 1006806~~	~~2 CABLE, COAX~~	22
21	2 MS51957-31	SCREW, PAN HD	21
20	1 2014427-002	BRACKET, STRAIN RELIEF	20
19	* 6.7 SEE NOTE 13	BRAID, WIRE	19
18	* 8.9 SEE NOTE 13	BRAID, WIRE	18
17	AR MIL-S-22473 GRADE HV	RETAINING COMP	17
16	AR 1006683	RUBBER COMPOUND SILICONE	16
15	2 1000243-41	FERRULE, ELECTRICAL COND	15
14	6 1000243-34	FERRULE, ELECTRICAL COND	14
13	1 2014310-011	COVER, PROTECTIVE	13
12	4 1000243-38	FERRULE, ELECTRICAL COND	12
11	2 1000242-29		11
10	4 -38		10
9	2 -37		9
8	6 1000242-30	FERRULE, ELECTRICAL COND	8
7	* 2.1 RG180 B/U	WIRE, COAX	7
6	* 18.6 1014341-12	WIRE, ELEC TWPR BLK/WHT	6
5	2 1000243-31	FERRULE, ELEC, COND	5
4	* 3.3 SEE NOTE 14	WIRE, ELEC WHT/BLK TWSH	4
3	* 3.0 MIL-W-16878/4 E22	WIRE, ELECTRICAL BLK	3
2	* 7.2 MIL-W-16878/4 E24	WIRE, ELECTRICAL WHT	2
1	* 8.3 MIL-W-16878/4 E22	WIRE, ELECTRICAL WHT	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .03, ANGLES	RAYTHEON CO. LEXINGTON, MASS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
MATERIAL	CONTRACT NO. NAS 9-497	CABLE ASSEMBLY W227	
204268 NEXT ASSY USED ON APPLICATION	DRAWN E. E. Jernigan 12 AUG 65 CHECKED R. Dorenberg 12 AUG 65 ENGINEER [illegible] APPROVAL [illegible] MFG APPROVAL [illegible] NASA APPROVAL [illegible] RAY APPROVAL [illegible] MIT APPROVAL [illegible]	CODE IDENT NO 49956 SIZE J NASA DRAWING NO 2014199 SCALE 1/1 WT SHEET 1 OF 4	

2014199 E

2014199 E

ASSEMBLY INFORMATION CHART

FROM REMARKS	FROM CONN/IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO.	TO STA NO.	TO DES	TO REMARKS
	A1	7	P1-122	WHT	24	6	22	P2-G3	
	A2		122	BLK				G4	
	A3		123	WHT				G1	
	A4		223	BLK				G2	
	A5		124	WHT				F3	
	A6	7	224	BLK				F4	
	A7	C	125	WHT				F1	
	A8		225	BLK			22	F2	
	A9		126	WHT			23	E7	
	A10		226	BLK				E8	
	A11		127	WHT				E5	
	A12		227	BLK			23	E6	
	A13		128	WHT			22	F7	
	A14		228	BLK				F8	
	A15		129	WHT				F5	
	A16		229	BLK				F6	
	A17		130	WHT				H1	
	A18	C	230	BLK				H2	
	A19	C	132	WHT				G7	
	A20		232	BLK				G8	
	A21		133	WHT				G5	
	A22		233	BLK			22	G6	
	A23		134	WHT			21	S5	
	A24		234	BLK				S6	
	A25		135	WHT				S3	
	A26		235	BLK				S4	
	A27		136	WHT				S1	
	A28		236	BLK				S2	
	A29		137	WHT				T7	
	A30	C	237	BLK				T8	
	A31	C	38	WHT				T5	
	A32		238	BLK				T6	
	A33		139	WHT				T3	
	A34		239	BLK			21	T4	
	A35		140	WHT			23	B1	
	A36		240	BLK				B2	
	A37		141	WHT				A5	
	A38		241	BLK				A6	
GROUP I	A39		142	WHT				A3	
	A40		242	BLK			23	A4	
	A41		143	WHT			21	T1	
	A42	4	243	BLK			21	T2	
	A43	3	144	WHT			20	U7	
	A44		244	BLK				U8	
	A45		145	WHT				U5	
	A46		245	BLK				U6	
	A47		146	WHT				U3	
	A48		246	BLK				U4	
	A49		147	WHT				U1	
	A50		247	BLK				J2	
	A51		148	WHT				V7	
	A52		248	BLK				V8	
	A53		149	WHT				V5	
	A54	3	249	BLK				V6	
	A55	2	150	WHT				V3	
	A56		250	BLK				V4	
	A57		151	WHT				V1	
	A58		251	BLK				V2	
	A59		152	WHT				W7	
	A60		252	BLK			20	W8	
	A61		153	WHT			23	E3	
	A62		253	BLK				E4	
	A63		154	WHT				E1	
	A64		254	BLK				E2	
	A65		155	WHT				D7	
	A66	2	255	BLK				D8	
	A67	1	156	WHT				D5	
	A68		256	BLK				D6	
	A69		157	WHT				D3	
	A70		257	BLK				D4	
	A71		158	WHT		6		D1	
	A72	1	P-258	BLK	24		23	P2-D2	
	A73	Δ	E2	SHLD			Δ	E12	
	A74	Δ	E12	BLK	22	3	23	P2-C7	
	A75	Δ	E12	BLK	22	3	23	P2-C8	
	A76	Δ	E2	BLK	22	3	Δ	E23	SEE DETAIL K
	A90	10	P1-304	WHT	24	2	33	P6-A5	
	A91	10	305				1	C1	
	A92	10	306				1	D4	
	A93	9	307				33	C7	
	A94	9	308				32	G1	
	A95	9	303				32	H7	
GROUP II	A96	10	204				33	B1	
	A97	10	205				1	C3	
	A98	10	404					A3	
	A99	10	405					B7	
	A50	10	406					D2	
	A51	9	407				33	E4	
	A52	9	408				32	F1	
	A53	9	P1-409	WHT	24	2	32	P6-H1	

ASSEMBLY INFORMATION CHART

FROM REMARKS	FROM CONN/IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO.	TO STA NO.	TO DES	TO REMARKS
	A54	10	P1-206	WHT	24	2	33	P6-D6	
	A55	9	207				32	F1	
	A56	10	504				32	H3	
	A57	10	505				33	B5	
	A58	10	506				33	C6	
	A59	9	507				33	E2	
	A60		508				32	F5	
	A61		503					H5	
GROUP II	A62	9	208					G8	
	A63	10	604				32	G5	
	A64	10	605				33	B3	
	A65	10	606				33	C6	
	A66	9	607				33	D1	
	A67	9	608				32	F3	
	A68	9	609				32	G8	
	A69	8	116				31	S8	
	A70	10	104				31	S6	
	A71	10	105				31	S7	
	A72	10	106				32	U2	
	A73	9	107				32	U6	
	A74	9	P1-108	WHT	24	2	32	P6-U5	
			E20	SHLD			Δ	E13	
	A75	Δ	E13	BLK	22	3	32	P6-J7	
	A76	Δ	E13	BLK	22	3	31	P6-R6	
	A77	1	P1-459	WHT	22	1	Δ	E25	
	A78		259				Δ	E26	
	A79		359				34	R5-2	
	A80		260				Δ	E30	
	A81		360				Δ	E29	
	A82		261				34	R5-18	
	A83		361				Δ	E27	
	A84		461				Δ	E28	
	A85	1	P1-459				Δ	E6	
	A86	Δ	E6				34	R5-9	
	A87	Δ	E6					6	TWIST
	A88	Δ	E7					3	
	A89	Δ	E7				34	R5-19	
	A30	1	P1-160				Δ	E	
	A31	1	P1-460				Δ	E8	
GROUP III	A32	Δ	E8				34	R5-5	
	A33	Δ	E8					16	TWIST
	A34	Δ	E9					12	
	A35	Δ	E9				34	R5-17	
	A36	1	P1-161				Δ	E9	
	A37	34	R5-9	WHT	22	1	34	R5-8	
		Δ	E9	SHLD			Δ	E16	
	A38	Δ	E16	BLK	22	3	33A	R5-SHELL	
	A39	Δ	E9	BLK		3	Δ	E23	SEE DETAIL K
	A100	1	P1-659	WHT		1	Δ	E25	
	A101	Δ	E25				34	R5-10	
	A102	1	P1-539				Δ	E26	
	A103	Δ	E26				34	R5-11	
	A104	1	P1-661				Δ	E27	
	A105	Δ	E27				34	R5-7	
	A106	1	P1-361				Δ	E28	
	A107	Δ	E28				34	R5-13	
	A108	1	P1-360				Δ	E29	
	A109	Δ	E29				34	R5-15	
	A110	1	P1-660				Δ	E30	
	A111	Δ	E30	WHT	22	1	34	R5-14	
	A112	7	P1-619	WHT	24	2	16	P4-V5	
	A113	2	532				17	S6	
	A114	2	651					S7	
	A115	2	531				17	S8	
	A116	7	521				17	S3	
	A117	9	109				16	U4	
	A118		110				16	U6	
	A119		111				17	T6	
	A120	9	112				18	L2	
	A121	8	113				16	X3	
	A122	8	114				18	M1	
	A123	9	209				16	U1	
GROUP II	A124		210				16	U7	
	A125		211				17	T1	
	A126	9	212				16	X6	
	A127	8	213				17	S1	
	A128	9	310				16	U2	
	A129	9	311				17	T6	
	A130	9	312				16	W1	
	A131	8	313					X8	
	A132	8	314					W6	
	A133	9	410				16	U3	
	A134	9	411				17	T7	
	A135	9	412				16	W3	
	A136	8	413				17	S4	
	A137	8	414				16	W5	
	A138	9	510				16	U8	
	A139	3	P1-511	WHT	24	2	17	P4-T8	

ASSEMBLY INFORMATION CHART

FROM REMARKS	FROM CONN/IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO.	TO STA NO.	TO DES	TO REMARKS
	A140	9	P1-512	WHT	24	2	17	P4-T2	
	A141	8	513				16	V8	
	A142	8	514				16	W4	
	A143	9	610				16	U5	
GROUP IV	A144	9	611				17	T5	
	A145	9	612				17	T3	
	A146	8	613				16	W2	
	A147	8	P1-614	WHT	24	2	16	P4-X5	
		Δ	E22	SHLD			Δ	E11	
	A148	Δ	E11	BLK	22	3	19	P4-G5	
	A149	Δ	E11	BLK	22	3	18	P4-M3	
	A150	7	P1-520	WHT	24	2	12	P4-A2	
	A151		519				13	M8	
	A152		522				15	B2	
	A153		523				14	F6	
	A154	7	524				15	A4	
	A155	6	525					B6	
	A156		526					D2	
	A157		527					C3	
	A158		528				15	C6	
	A159		529				14	G8	
	A160	6	530				14	H6	
	A161	7	620				12	R5	
	A162		621				14	G6	
	A163		622				15	B4	
	A164		623					A6	
	A165	7	624					B1	
	A166	6	625					A5	
	A161		626					D1	
	A168		627					C7	
	A169		628				15	C5	
	A170		629				14	G7	
	A171	6	630				14	H5	
	A172	5	532				14	F4	
	A173		533				13	M7	
	A174		534				15	B3	
	A175		535				12	P8	
	A176		536				15	E3	
	A177	5	537				12	P4	
	A178	4	538				14	H7	
	A179		539				12	P6	
	A180		540				15	C3	
	A181		541				15	E2	
	A182		542				12	P3	
GROUP V	A188	3	543				14	F3	
	A184	3	544				14	F1	
	A185		545				15	E7	
	A186		546				15	E5	
	A187		547				14	H4	
	A188		548				13	H7	
	A189	3	549					L1	
	A190	2	550					K8	
	A191	8	214				13	K6	
	A192	2	533				15	D8	
	A193	2	534				15	D6	
	A194	2	535				15	D4	
	A195	1	536				13	N3	
	A196	1	537				15	B7	
	A197	1	538				15	C4	
	A198	5	632				14	F5	
	A199		633				13	M8	
	A200		634				13	N1	
	A201		635				12	P7	
	A202		636				15	C8	
	A203	5	637				12	P4	
	A204	4	638				13	B5	
	A205	4	639				12	R1	
	A206		640				15	C1	
	A207		641				15	E1	
	A208	1	642				12	P3	
	A209	4	643				14	F2	
	A210	3	644				13	G8	
	A211		645				15	E6	
	A212		646				15	E4	
	A213		647				12	R2	
	A214		648				14	H3	
	A215	3	649				14	H1	
	A216	2	650				14	H2	
	A217		652				12	P1	
	A218		658				15	D7	
	A219	1	654				15	D5	
	A220	2	655				15	D3	
	A221	1	656				13	M6	
	A222	1	P1-657	WHT	24	2	13	P4-B8	

REVISIONS			
SYM	DESCRIPTION	DATE	PPRCVD
O	RELEASED PER CCA R25808		
1	CHANGED PER CCA R25849 DR R Cook CHK J Klatt APPD DJM	9/11/	JK
—	CLASS B CHANGED PER CCAR25501	7/15/	JK
A	CHANGED PER CCA R25731 DR [illegible] CHK [illegible] APPD DJM	8/11/	JK
B	CHANGED PER CCAR25732 AND CLASS A RELEASED PER TDAR [illegible]	8/	JK
C	CHANGED PER TDAR 26449 DR D Cook CHK [illegible] APPD [illegible]	8/	JK
D	CHANGED PER TDAR 26532 DR R [illegible] CHK [illegible] APPD [illegible]	9/ 22	JK
E	CHANGED PER TDAR 27882 DR R Cook CHK J Klatt APPD PFC PEO	11/ 6	JK

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS .XX ±.03, .XXX ±.01, ANGLES ±0°30'. DO NOT SCALE DRAWING. MATERIAL.

NEXT ASSY | USED ON | APPLICATION

RAYTHEON CO. LEXINGTON, MASS. CONTRACT NO NAS 9-4391 DRAWN [illegible] DATE 10-26-65 CHECKED R Cook MAYO APPROVAL [illegible] APPROVAL D Klatt APPROVAL [illegible] NASA APPROVAL A.E. [illegible] MIT APPROVAL [illegible] MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

CABLE ASSEMBLY W227

SIZE J | CODE IDENT NO. 49956 | NASA DRAWING NO. 2014199 | SCALE NONE | WT. | SHEET 1 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014199 E

ASSEMBLY INFORMATION CHART

REMARKS	FROM: CONDIDENT	FROM: STA NO	FROM: DES	DESCRIPTION: COLOR	DESCRIPTION: AWG	DESCRIPTION: FIND NO.	TO: STA NO.	TO: DES	REMARKS
	A223	1	P1-4GB	WHT	24	2	13	P4-N6	
	A224	8	P1-216	WHT	24	2	13	P4-K8	
	A225	8	P1-215	WHT	24	2	13	P4-R2	
GROUP I		△	E3	SHLD		19	△	E10	
	A226	△	E10	BLK	22	3	14	P4-G6	
	A227	△	E3	BLK	22	3	△	E23	SEE DETAIL K
	A228	△	E10	BLK	22	3	14	P4-G3	
	A229	10	P1-101	WHT	24	2	29	P6-W7	
	A230	↑	↑ 103	↑	↑	↑	↑	↑ V1	
	A231		201					W5	
	A232		301					W3	
	A233		401					W1	
	A234		501					X5	
	A235		601					X3	
	A236		502				↓	V2	
	A237		402				29	V6	
	A238		203				30	T3	
GROUP II	A239		303				30	T2	
	A240		403				30	T1	
	A241		503				29	U7	
	A242		603				29	U6	
	A243	↓	602				30	T8	
	A244	10	↓ 302	↓ WHT	↓ 24	↓ 2	29	↓ V5	
	A245	8	P1-115	WHT	24	2	29	P6-V8	
		△	E5	SHLD			△	E14	
	A246	△	E14	BLK	22	3	30	P6-T7	
	A247	△	E5	BLK	22	3	△	E23	SEE DETAIL K
	A248	△	E3	BLK	22	3	11	E1	SEE DETAIL K
	A249	△	E14	BLK	22	3	30	P6-R7	
	A250	8	P1-315	WHT	24	G	25	P3-P5	
	A251	↑	↑ 415	BLK	↑	↑	25	P6	
			316	WHT			25	P3	
			418	BLK			25	P4	
	A252		317	WHT			26	N3	
			417	BLK			↑	N4	
	A253	↓	318	WHT			↓	K3	
		8	418	BLK				K6	
	A254	7	319	WHT			26	K7	
		↑	419	BLK			↑	K8	
	A255		320	WHT			27	J1	
			420	BLK			↑	J2	
	A256		321	WHT			↓	N7	
			421	BLK			27	H8	
	A257		322	WHT			25	P1	
			422	BLK			25	P2	
	A258		323	WHT			26	N7	
			423	BLK			26	N8	
	A259	↓	324	WHT			25	R7	
		7	424	BLK			↑	R8	
GROUP VIII	A260	6	325	WHT				S5	
		↑	425	BLK				S6	
	A261		326	WHT				S3	
			426	BLK				S4	
	A262		327	WHT				S1	
			427	BLK			25	S2	
	A263		328	WHT			26	N1	
			428	BLK			↑	N2	
	A264		329	WHT				M7	
			429	BLK				M8	
	A265	↓	330	WHT				N3	
		6	430	BLK				N6	
	A266	5	332	WHT				M1	
		↑	432	BLK				M2	
	A267		333	WHT				L7	
			433	BLK				L8	
	A268		334	WHT				L1	
			434	BLK				L2	
	A269		335	WHT			↓	K1	
			435	BLK			26	K2	
	A270		336	WHT			27	J7	
			436	BLK			↑	J8	
	A271	↓	337	WHT				J5	
		5	437	BLK				J6	
	A272	4	338	WHT				J3	
		↑	438	BLK				J4	
	A273		339	WHT			↓	G1	
			439	BLK			27	G2	
	A274		340	WHT			28	C7	
			440	BLK			↑	C8	
	A275		341	WHT				C5	
			441	BLK				C6	
	A276		342	WHT				C3	
			442	BLK				C4	
	A277	↓	343	WHT	↓	G	↓	C1	
		4	P1-443	BLK	24		28	P3-C2	

△ DENOTES INTERNAL CONNECTION
△ ATTACH FIND 5
△ ATTACH FIND 22 PER DETAIL M
~~△ MARK FIND NO. 3 WITH CONDUCTOR IDENT NO. OF ASSOCIATED COAX LEAD & ASSEMBLE PER DETAIL N~~
~~△ STRIP .16 TIN OE~~
~~△ STRIP .31 TIN OE~~
~~△ STRIP .25, DO NOT TIN~~

ASSEMBLY INFORMATION CHART

REMARKS	FROM: CONDIDENT	FROM: STA NO	DESCRIPTION: DES	DESCRIPTION: COLOR	DESCRIPTION: AWG	DESCRIPTION: FIND NO.	TO: STA NO.	TO: DES	REMARKS
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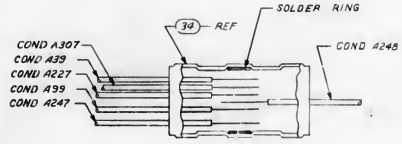
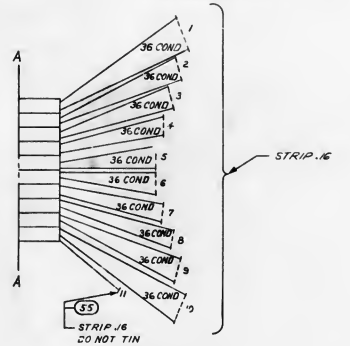
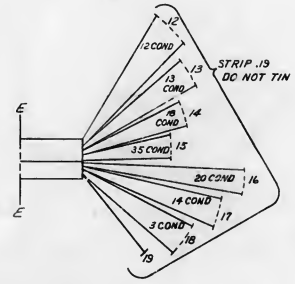
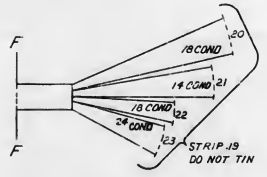
		↑	444	BLK	↑		28	↑ B8	
	A279		345	WHT		↑	27	F5	
			445	BLK			27	F6	
	A280		346	WHT			28	B5	
			446	BLK			↑	B6	
	A281		347	WHT				B3	
			447	BLK				B4	
	A282		348	WHT				B1	
			448	BLK				B2	
	A283	↓	349	WHT				E7	
		3	449	BLK				E8	
	A284	2	350	WHT			↓	E5	
		↑	450	BLK			28	E6	
	A285		351	WHT			24	V5	
			451	BLK			24	V6	
	A286		352	WHT			27	G5	
			452	BLK			27	G6	
	A287		353	WHT			28	A5	
			453	BLK			↑	A6	
	A288		354	WHT				A3	
			454	BLK				A4	
	A289	↓	355	WHT				E3	
		2	455	BLK				E4	
	A290	1	356	WHT				E1	
		↑	456	BLK				E2	
	A291		357	WHT				D7	
			457	BLK				D8	
	A292	↓	358	WHT				D5	
GROUP VII		1	458	BLK				D6	
	A293	8	517	WHT				D3	
		↑	617	BLK				D4	
	A294		518	WHT			↓	D1	
			618	BLK			28	D2	
	A295		117	WHT			25	R3	
			217	BLK			25	R4	
	A296	↓	118	WHT			27	H5	
		8	218	BLK			↑	H6	
	A297	7	119	WHT				H3	
		↑	219	BLK				H4	
	A298		120	WHT				H1	
			220	BLK				H2	
	A299	↓	121	WHT			↓	G7	
		7	221	BLK			27	G8	
	A300	8	515	WHT		6	26	N5	
		8	615	BLK			26	N8	
		10	102	WHT			24	X5	
	A301	10	P1-202	BLK	24	4	24	P3-X6	
		△	E18	SHLD			△	E17	
	A302	△	E17	BLK	22	3	24	P3-X4	
	~~A303~~	~~△~~	~~E19~~	~~COAX~~	~~30~~	~~7~~	~~△~~	~~E24~~	
		~~8~~	~~P1-616~~	~~SHLD~~			~~24~~	~~P3-U8~~	
	A304	8	P1-316	WHT	22	1	△	E19	
	A305	△	E24	WHT	22	1	24	P3-U7	
		△	E21	SHLD			△	E13	
	A306	△	E13	BLK	22	3	24	P3-X3	
	A307	△	E21	BLK	22	3	△	E23	SEE DETAIL K
	A308	△	E19	COAX	30	7	△	E24	
		△	E19-SHD	SHLD			△	E24	
	A309	8	P1-616	BLK	22	3	△	E19	
	A310	△	E24	BLK	22	3	24	P3-U8	

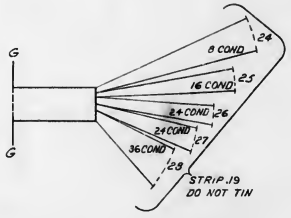


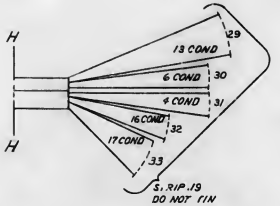
DETAIL K
SCALE NONE
ALL COND IDENT ARE FOR REFERENCE

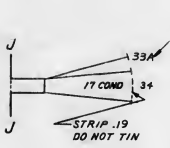












REVISIONS				
LTR	DESCRIPTION	DATE	APP'D	
0	RELEASED PER DR F2-381			
1	CHANGED PER CCR 525449 DR R24 CHK APPD			
-	CLASS B CHANGED PER CCR 55501			
A	CHANGED PER SCA R5537 CHK APPD			
B	CHANGED PER CCA 23732 AND CLASS A RELEASED PER TDRR 28477			
C	CHANGED PER TDRR 26449 DR CHK APPD			
D	CHANGED PER TDRR 26938 DR CHK APPD			
E	CHANGED PER TDRR 27892 DR CHK APPD			

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION
		LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ±.03 .xxx ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

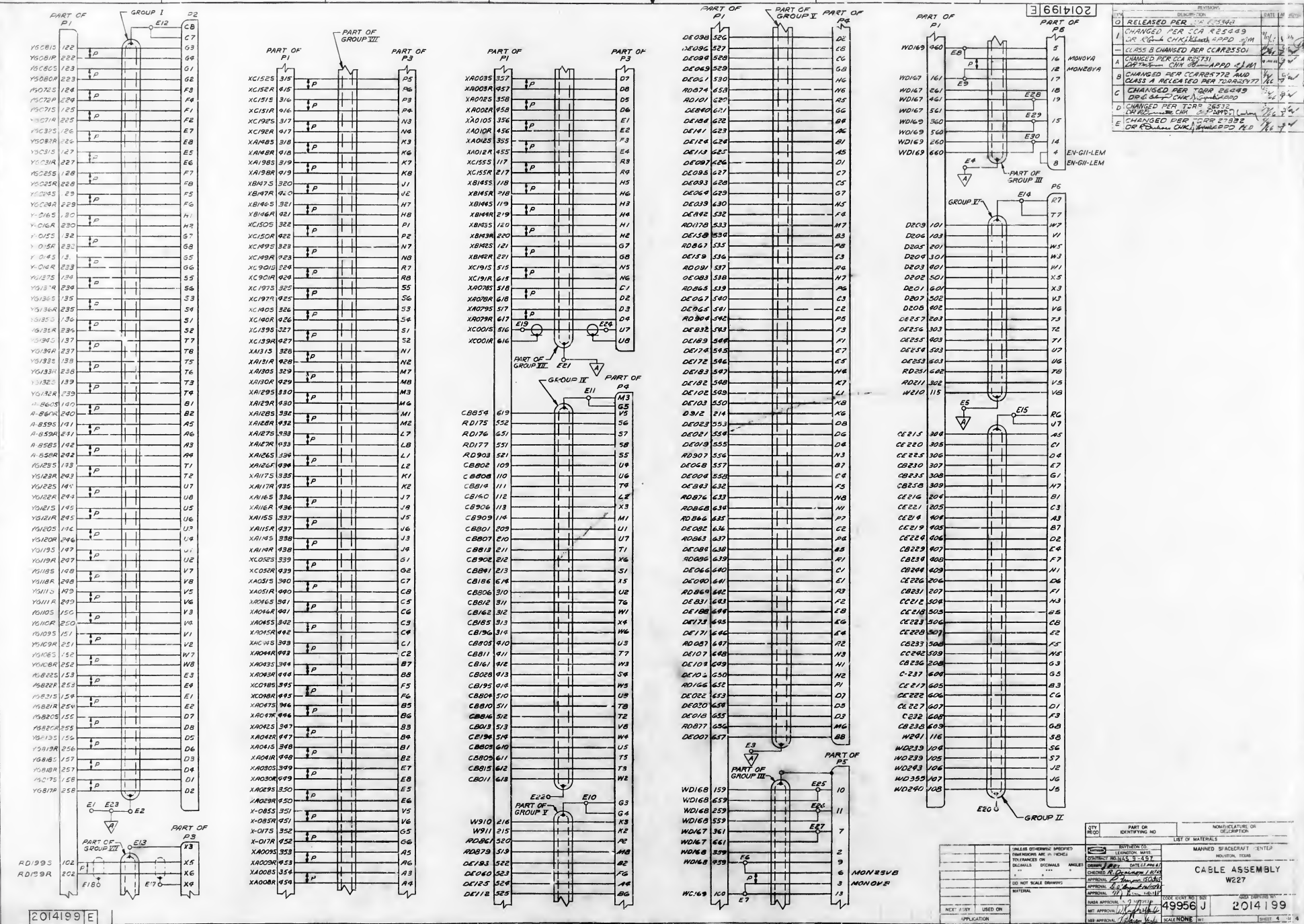
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN L.E. DATE 8 MARCH
CHECKED R. Cameron 10 FEB 65
APPROVAL [illegible] 10 FEB 65
APPROVAL [illegible] 11/6/65
APPROVAL [illegible]
NASA APPROVAL [illegible]
MFT APPROVAL [illegible]
MFT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY
W227

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014199
SCALE 1/1 | WT | SHEET 3 OF 4

2014199 L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GROUP VII
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PART OF P3
PART OF GROUP VII
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PART OF P1
PART OF P3
PART OF GROUP VII
PART OF GROUP V
PART OF GROUP VI
GROUP IV
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P2
P1
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B8
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PART OF P2
PART OF P5
PART OF GROUP III
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E27
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E7
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GROUP V
GROUP II
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E29
E30
E4
E14
E5
E15
E20
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WD169
WD169
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116
104
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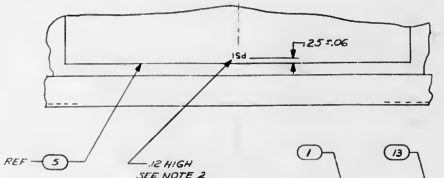
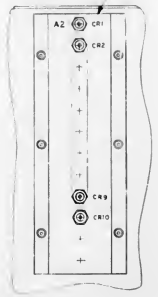
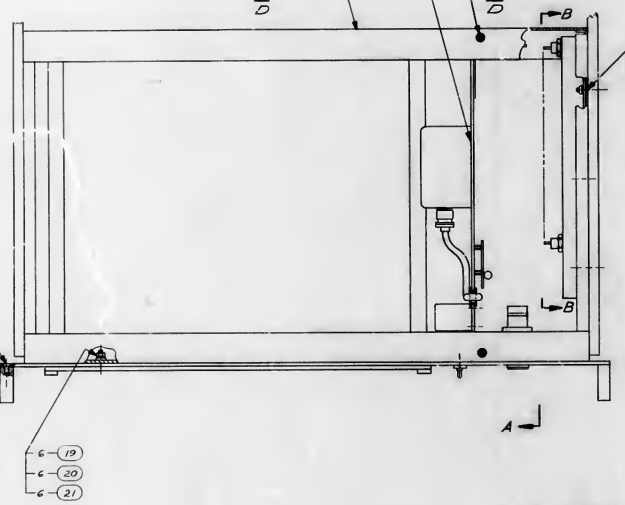
107
108
REVISIONS
LTR
DESCRIPTION
DATE
APPD
O
RELEASED PER
A
CHANGED PER CCA R25449 OR
CLASS B CHANGED PER CCAR25501
CHANGED PER CCA R25731 OR
CHANGED PER CCAR25772 AND CLASS A RELEASED PER TDAR25477
B
C
CHANGED PER TDRR 26449
D
CHANGED PER TDRR 26530
E
CHANGED PER TDRR 27932
2014199 E
2014199
QTY REQD
PART OR IDENTIFYING NO
NOMENCLATURE OR DESCRIPTION
LIST OF MATERIALS
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY
USED ON
APPLICATION
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-451
DRAWN
CHECKED
APPROVAL
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
CABLE ASSEMBLY
W227
CODE IDENT NO.
49956
SIZE
J
DWG NUMBER
2014199
SCALE NONE
WT.
SHEET 4

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25179		
1	CHANGED PER CCA A25237 CP TO ALT. NOTE 11 ADDED		
-	CLASS B CHANGE PER CCA A25237		
A	CHANGED PER CCA 25537 AND CLASS A RELEASE PER TDR 25476		
B	CHANGED PER TDR 26265 ORDER CHANGE CCA A2550 REV. A		

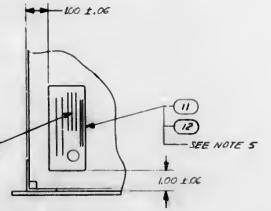




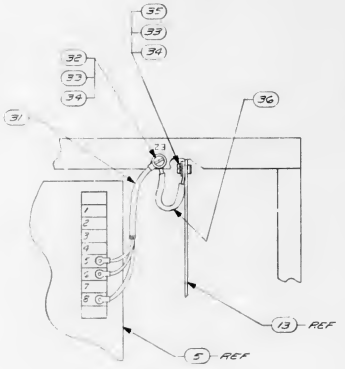
SECTION B-B



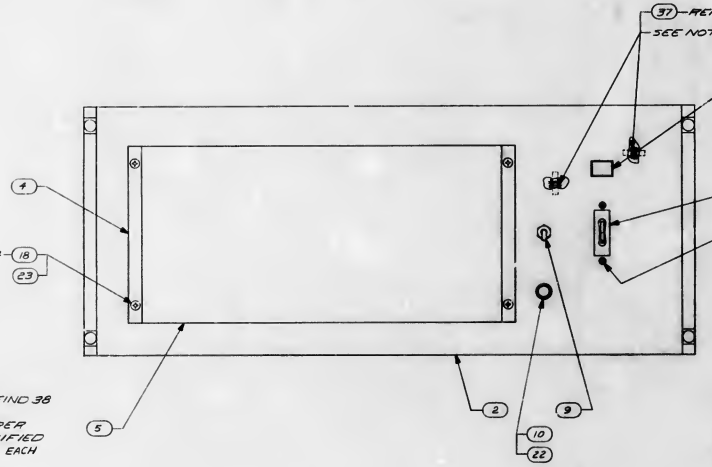
SECTION A-A



PARTIAL VIEW C-C



PARTIAL VIEW D-D



JUMPER CHART					
CONN IDENT	FROM	TO	FIND NO.	AWG	REMARKS
~~A1~~	~~P1-B~~	~~J1-H3~~	~~28~~	~~16~~	
B2	J1-C	P1-A	28	22	
B3	DS1-A	DS1-B	28	22	SEE NOTE 9

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1 CENTRALLY LOCATED ON FIND NO. 5
3. SERIALIZE PER ND1002023
4. AS DIRECTED AS REQUIRED
5. BOND FIND NO. 11 TO FIND NO. 1 USING FIND NO. 12
6. FABRICATE PER ND1002038 EXCEPT USE FIND 38
7. SOLDER PER ND1002071
8. STRIP ALL LEADS .50 ±.06 AND TIN PER ND1002071 UNLESS OTHERWISE SPECIFIED
9. STRIP BOTH ENDS .19±.06 DO NOT TIN EACH END FIND 11 & 39
10. CRIMP PER ND1002206
11. REMOVE EXISTING JUMPERS FROM TERMINAL BOARD OF FIND NO. 5

* DENOTES LENGTH IN FEET

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		SCHEMATIC	REF
2	MS25036-1	TERMINAL LUG	33
	2014439	INTERCONNECTION DIAGRAM	REF
AR	1006238-004	TAPE, LACING	36
1	2014185-011	WIRING HARNESS	37
1	2014453-011	CABLE ASSY GRD	36
1	MS51957-34	SCREW, PAN HD	35
2	MS35338-82	WASHER, LOCK	34
2	MS15795-810	WASHER, FLAT	33
1	MS35307-302	SCREW, CAP, HEX HD	32
1	2014459-011	CABLE ASSY GRD	31
2	1006660	SLIDE, CHASSIS	30
14	MS20426AD5-10	RIVET, SOLID	29
* 0.5	MIL-W-16878/4-22	WIRE, ELECT INST	28
1	1006404-037	LIGHT, INDICATOR-LENS	27
1	1006404-004	LIGHT INDICATOR-DIS SCREEN	26
1	1006404-002	LIGHT INDICATOR-COLOR FILTER	25
2	1006407-003	LAMP	24
AR	MIL-S-22473, GR MV	SEALING & RETAINING COMP	23
1	FCB A250V 1½A	FUSE, 1 1/2 AMP MIL-F-19207	22
6	MS35649-84	NUT, HEX	21
10	MS15795-807	WASHER, FLAT	20
10	MS35338-80	WASHER, LOCK	19
+	MS51960-67	SCREW, FLAT HD	18
+	MS51957-44	SCREW, PAN HD	17
8	MS51239-45	SCREW, FLAT HD	16
2	MS51959-27	SCREW, FLAT HD	15
6	MS24693-C26	SCREW, FLAT HD	14
1	2014325-011	COMPONENT SD ASSY, A1	13
AR	MIL-A-5092 TYPE II	CEMENT	12
1	1004260-237	NAMEPLATE	11
1	MS26572-1	FUSEHOLDER	10
1	MS35058-22	SWITCH, TOGGLE	9
1	1006404-001	LIGHT, INDICATOR-MASK JN	8
1	1006479-001	CIRCUIT BREAKER	7
1	2014077-011	BRACKET, DIODE ASSY, A2	6
1	1006733	POWER SUPPLY	5
2	2014211	STRAP	4
2	1014215-6	HANDLE ASSY	3
1	2014210	PANEL	2
1	2014206	CHASSIS	1
-011		LIST OF MATERIALS	

CONTRACT NO. NAS 9-497	
DRAWN	DATE 2 JAN 63
CHECKED	DATE 2 JAN 63
APPROVAL	
APPROVAL	
APPROVAL	
NASA APPROVAL	
MIT APPROVAL	
MIT APPROVAL	

RAYTHEON CO. LEXINGTON, MASS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

POWER SUPPLY ASSY
115 VAC 400 CYCLES
OPERATION CONSOLE

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014207

SCALE 1/2 | WT | SHEET | OF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx ± .yyy DECIMALS .xxx ± .zzz ANGLES ± °
DO NOT SCALE DRAWING
MATERIAL

2014029 NEXT ASSY | USED ON APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014207 B

2014207 B

2014216 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA [illegible]	[illegible]	
1	CHANGED PER CC 9 R25485 DR P. [illegible] CHK E. Urban APPD P. [illegible]	11/1/	
—	CLASS B CHANGED PER CCA R25502	2/1/67	
A	CHANGED PER CCA R25621 DR A. Pingalore CHK [illegible] APPD [illegible]	3/1/	
B	CHANGED PER CCA R25711 AND CLASS A RELEASED PER TDRR 25472	7/	
C	CHANGED PER TDRR 26502 DR E. Ufring CHK [illegible] APPD	8/	

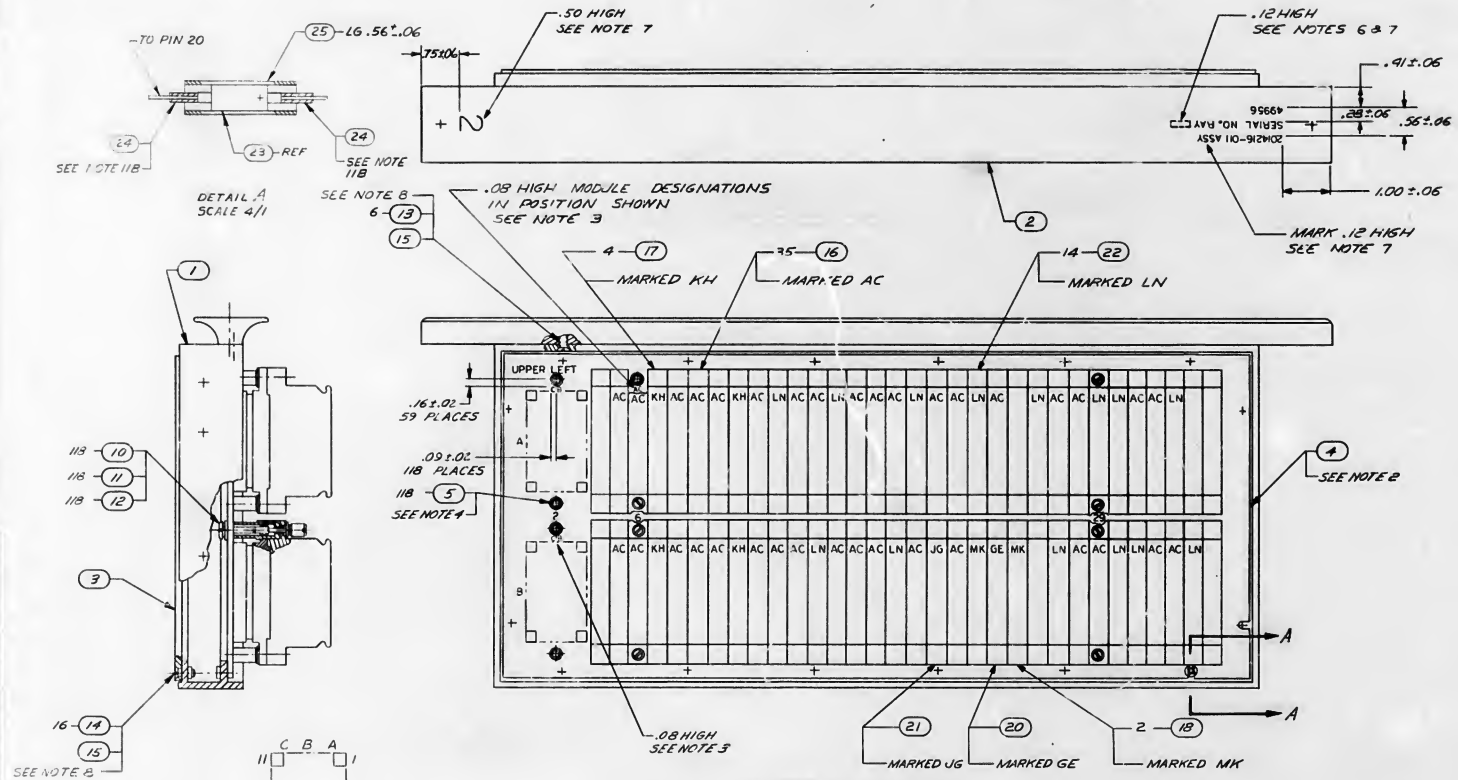
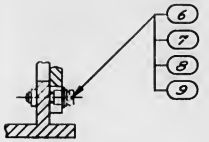


CHART A				
REF DES	FIND NO.	FROM	TO	REMARKS
C1	23	2A15-4	2A15-20	
C2		2B3-4	2B3-20	
C3		2A17-17	2A18-20	
C4		2B9-2	2B9-20	
C5	23	2B5-4	2B5-20	



SECTION A-A
16 PLACES
SCALE 2/1

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO. 4 USING FIND NO. 19 PER 2014086 AND ND1002031
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10.
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047.
5. AR DENOTES AS REQUIRED
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARACTERS AS SHOWN. PER ND1002019 USING WHITE INK 1006271-1.
8. INSTALL FIND NO. 13 AND FIND NO. 14 USING FIND NO. 15
~~9. MIL-I-631, TYPE F, FORM U3, GRADE 2, CLASS I, CATEGORY I, COLOR BLUE, AWG SIZE NO. 24 FOR FIND NO. 24~~
10. MIL-I-631, TYPE F, FORM U3, GRADE 2, CLASS I, CATEGORY I COLOR CLEAR, AWG SIZE NO. 8 FOR FIND NO. 25
11. AFTER MACHINE WIRE WRAPPING PLATE, INSTALL FIND 110.23 PER CHART A & DETAIL A
   11A. SOLDER PER ND1002071
   11B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY PIN LOCATION AT ASSY

	2014051	LOGIC DIAGRAM	REF
	2014086	WIRE WRAP MACH. CARD	REF
.4	SEE NOTE 10	SLEEVING	25
AR	1006776-197	SLEEVING, INSULATION	24
5	CS13AF010K	CAPACITOR, 1uF, 35VDC	23
19	2014000-011	MODULE, BUFFERED FLIP-FLOP	22
1	1014065-3	MODULE, RESISTOR	21
1	1014230	MODULE, INTERFACE RECEIVER	20
AR	1006945-1	WIRE, ELEC, INS, NO 24 AWG SOLID	19
2	1014096	MODULE, DRIVER	18
4	1014079	MODULE, GATED FLIP-FLOP	17
35	1014034	MODULE, NOR	16
AR	MIL-S-22473, GR-HV	SEALING & RETAINING COMPOUND	15
16	MS51959-15	SCREW, FLAT HD	14
6	MS51959-27	SCREW, FLAT HD	13
118	MS35338-79	WASHER, LOCK	12
118	1006957	WASHER, FLAT	11
118	MS51957-29	SCREW, PAN HD	10
16	1006986	WASHER, SHOULDERED, NYLON	9
16	MS35338-73	WASHER, LOCK	8
16	MS15795-803	WASHER, FLAT	7
16	MS51957-17	SCREW, PAN HD	6
118	1014212	STAND-OFF, PROGRAM	5
1	1006435-001	PLATE ASSY	4
1	1014026	COVER, CONN PLATE	3
1	1014007	SUPPORT, FRAME	2
1	1014014-2	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
-111		LIST OF MATERIALS	

* DENOTES LENGTH IN FEET

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ±.01 .XXX ±.005 ANGLES ±0° 0' 0"	DIFFERENTIAL CO. LEXINGTON, MASS.
		DO NOT SCALE DRAWING	MATERIAL
2014037			
NEXT ASSY	USED ON	APPLICATION	

CONTRACT NO. NAS 9-427
DESIGN [illegible] DATE 8/1/66
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL A. C. METZGER
INT APPROVAL [illegible]
INT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

LOGIC PLATE ASSY NO. 2
LOGIC DRAWER NO. 1
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014216
SCALE 1/1 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014217 D

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25059		
1	REVISED PER TDRR R25128 DR CHK APPD		
2	CHANGED PER CCA R25485 DR CHK APPD		
—	CLASS B CHANGED PER CCA R25572		
A	CHANGED PER CCA R25621 DR CHK APPD		
B	CHANGED PER CCA R25699 DR CHK APPD		
C	CHANGED PER CCA R25711 AND CLASS A RELEASED PER TDRR 27072		
D	CHANGED PER TDRR 27305 DR CHK APPD		

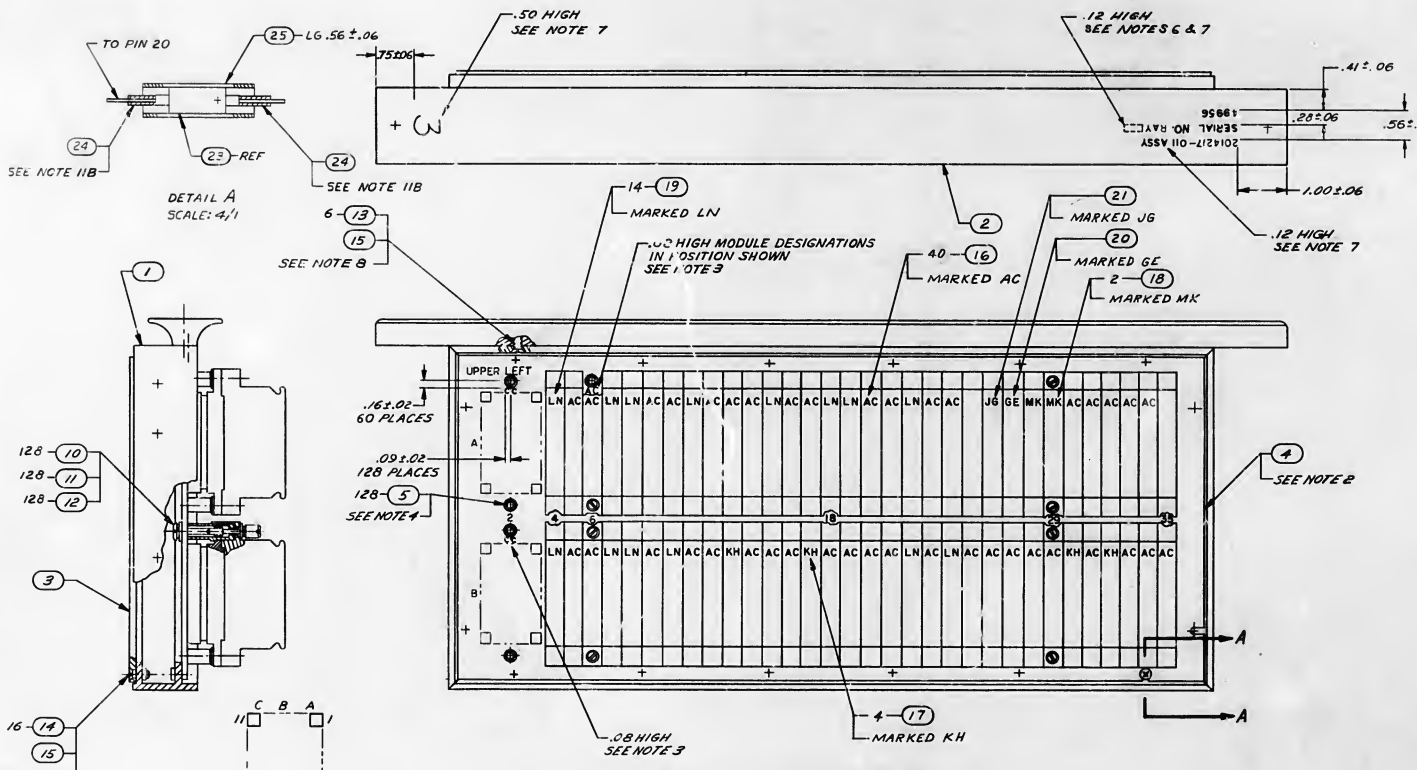
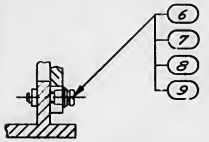


CHART A				
REF DES	FIND NO.	FROM	TO	REMARKS
C1	23	3B35-5	3B35-20	
C2	23	3B33-2	3B33-20	



SECTION A-A 16 PLACES SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	2014052	LOGIC DIAGRAM	REF
	2014087	WIREWRAP MACH. CARD	REF
.2	SEE NOTE 10	SLEEVING	25
AR	1006776-197	SLEEVING, INSULATION	24
2	CS13AF010M	CAPACITOR, 1uF, 35VDC	23
AR	1006945-1	WIRE, ELECT, INSUL, 24AWG, SOLID	22
1	1014065-3	MODULE, RESISTOR SIP	21
1	1014230	MODULE, INTERFACE RECEIVER	20
14	2014000-011	MODULE, BUFFERED FLIP FLOP	19
2	1014096	MODULE, DRIVER	18
4	1014079	MODULE, GATED FLIP FLOP	17
40	1014034	MODULE, NOR	16
AR	MIL-S-22473, GR, MV	SEALING & RETAINING COMPOUND	15
16	MS51959-15	SCREW, FLAT HD	14
6	MS51959-27	SCREW, FLAT HD	13
128	MS35338-79	WASHER, LOCK	12
128	1006997	WASHER, FLAT	11
128	MS51957-29	SCREW, PAN HD	10
16	1006986	WASHER, SHOULDERED, NYLON	9
16	MS35338-78	WASHER, LOCK	8
16	MS15795-803	WASHER, FLAT	7
16	MS51957-17	SCREW, PAN HD	6
128	1014212	STAND-OFF, PROGRAM	5
1	1006495-001	PLATE ASSY	4
1	1014026	COVER, CONN PLATE	3
1	1014007	SUPPORT, FRAME	2
1	1014014-2	FRAME	1
-011		LIST OF MATERIALS	

* DENOTES LENGTH IN FEET

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO. 4 USING FIND NO 22 PER 2014087 AND ND1002031
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047
5. AR DENOTES AS REQUIRED
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
8. ASSEMBLE FIND NO. 13 & FIND NO. 14 USING FIND NO. 15
~~9. MIL-I-631, TYPE F, FORM U2, GRADE 2, CLASS 1, CATEGORY 1, COLOR BLUE, AWG SIZE NO. 24 FOR FIND NO. 24.~~
10. MIL-I-631, TYPE F, FORM U2, GRADE 2, CLASS 1, CATEGORY 1, COLOR CLEAR, AWG SIZE NO. 8 FOR FIND NO. 25
11. AFTER MACHINE WIREWRAPPING PLATE, INSTALL FIND NO. 23 PER CHART A & DETAIL A
   11A. SOLDER PER ND1002071
   11B. LENGTH OF SLEEVING TO BE DETERMINED BY PIN LOCATION AT ASSY

MASTER

2014036			
NEXT ASSY	USED ON		
APPLICATION			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS .xx ±.01, .xxx ±.005, ANGLES ±0°30'. DO NOT SCALE DRAWING. MATERIAL.

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J. Hoge DATE 1-MAY-65
CHECKED R. Peterson 16 JUN 65
APPROVAL P. Cook 16 JUN 65
APPROVAL D. Ray T. Jones 16 JUN 65
APPROVAL [illegible] 21 JUN 65
NASA APPROVAL A. G. METTLER
MIT APPROVAL [illegible] 6/16
MIT APPROVAL [illegible] 6/16

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

LOGIC PLATE ASSY NO. 3
LOGIC DRAWER NO. 1
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE F | RAYCO DRAW NO. 2014217
SCALE 1/1 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014218 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCR 25040	1/20/64	
1	CHANGED PER CCA R25685 DR M. Lane CHK Nelson APPD P. Nelson	1/1/64	
—	CLASS B CHANGED PER CCA R25500	1/29/64	
A	CHANGED PER CCA R25621 DR Livingston CHK Jones APPD P.D.	1/1/64	
B	CHANGED PER CCA R25711 AND CLASS A RELEASED PER TORR 25402	1/1/64	
C	CHANGED PER TORR 35529 DR Mrs. Parker CHK E. Nelson	2/1/64	

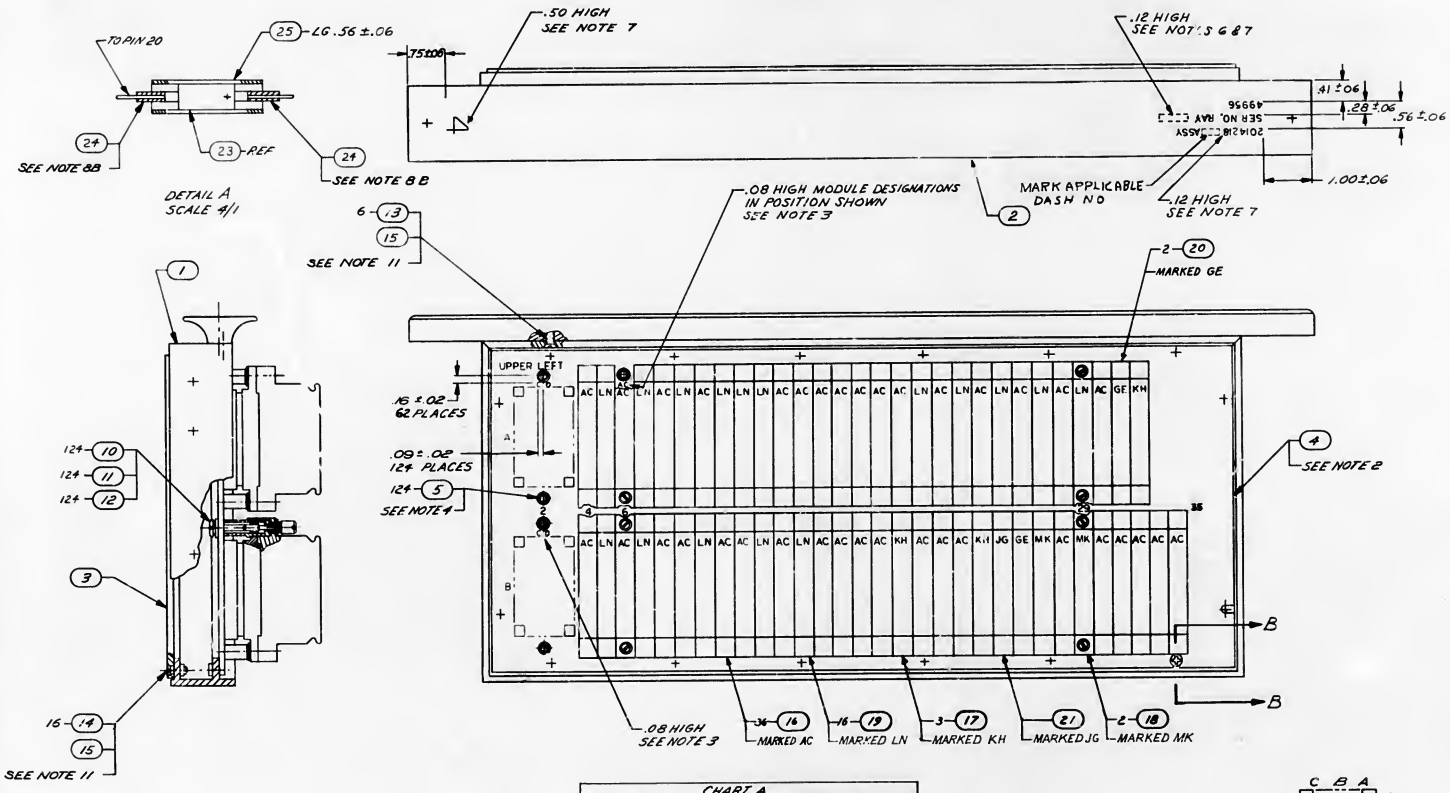
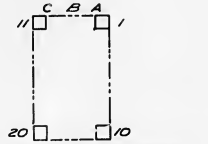
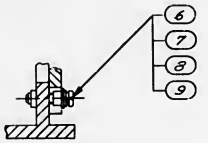


CHART A				
REF DES	FIND NO.	FROM	TO	REMARKS
C1	23	4B33-2	4B33-20	
C2		4B33-19	4B35-20	
C3		4A27-3	4A27-20	
C4	23	4A21-13	4A21-20	



TYPICAL 60 PIN CONTACT GROUP DESIGNATIONS (REF ONLY)



SECTION B-B
16 PLACES
SCALE 2/1

NOTES:
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO 4 USING FIND NO 23 PER 2014088, OR 2016481 AND ND1002071.
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG. NO. 1014047
5. AR DENOTES "AS REQUIRED"
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
8. AFTER MACHINE WIREWRAPPING PLATE, INSTALL FIND NO. 23 PER CHART A & DETAIL A
   8A. SOLDER PER ND1002071
   8B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY PIN LOCATION AT ASSY
9. ~~MIL-I-631 TYPE F FORM U1 GRADE B CLASS I CATEGORY I COLOR BLUE AWG SIZE NO 24 FOR FIND NO 24~~
10. MIL-I-631 TYPE F FORM U1 GRADE B CLASS I CATEGORY I COLOR CLEAR AWG SIZE NO 8 FOR FIND NO. 25
11. ASSEMBLE FIND NO. 13 & FIND NO. 14 USING FIND NO. 15

* DENOTES LENGTH IN FEET

QTY REQD		PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			LIST OF MATERIALS	
	—	2016481	WIREWRAP MACH CARD	REF
	—	2016477	LOGIC DIAGRAM	REF
	—	2014088	WIREWRAP MACH. CARD	REF
	—	2014053	LOGIC DIAGRAM	REF
.3	.3	SEE NOTE 10	SLEEVING	25
AR	AR	1006776-197	SLEEVING, INSULATION	24
4	4	CS 13AF010K	CAPACITOR 1μf 35V	23
AR	AR	1006945-1	WIRE ELECTRICAL	22
1	1	1014065-3	MODULE, RESISTOR 510 Ω	21
2	2	1014230	MODULE, INTERFACE RECIEVER	20
16	16	2014000-011	MODULE, BUFFERED FLIP-FLOP	19
2	2	1014096	MODULE, DRIVER	18
3	3	1014079	MODULE, GATED FLIP FLOP	17
36	36	1014034	MODULE, NOR	16
AR	AR	MIL-S-22473, GR-HV	SEALING & RETAINING COMPOUND	15
16	16	MS 51959-15	SCREW, FLAT HD	14
6	6	MS51959-27	SCREW, FLAT HD	13
124	124	MS35338-79	WASHER, LOCK	12
124	124	1006997	WASHER, FLAT	11
124	124	MS51957-29	SCREW, PAN HD	10
16	16	10C5986	WASHER, SHOULDERED, NYLON	9
16	16	MS35338-78	WASHER, LOCK	8
16	16	MS15795-803	WASHER, FLAT	7
16	16	MS51957-17	SCREW, PAN HD	6
124	124	1014213	STAND-OFF, PROGRAM	5
1	1	1006495-001	PLATE ASSY	4
1	1	1014026	COVER, CONN PLATE	3
1	1	1014007	SUPPORT, FRAME	2
1	1	1014014-2	FRAME	1

-021 -011

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .— .— .— DECIMALS .— ANGLES —°	RAYTHEON CO. LEXINGTON, MASS.
		DO NOT SCALE DRAWING	CONTRACT NO. NAS—
		MATERIAL	DRAWN [illegible] DATE 2/4/64
			CHECKED [illegible]
			APPROVAL [illegible]
			APPROVAL [illegible]
			APPROVAL [illegible]
			NASA APPROVAL [illegible]
			WIT APPROVAL [illegible]
			WIT APPROVAL [illegible]
2014036			
NEXT ASSY	USED ON		
APPLICATION			

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

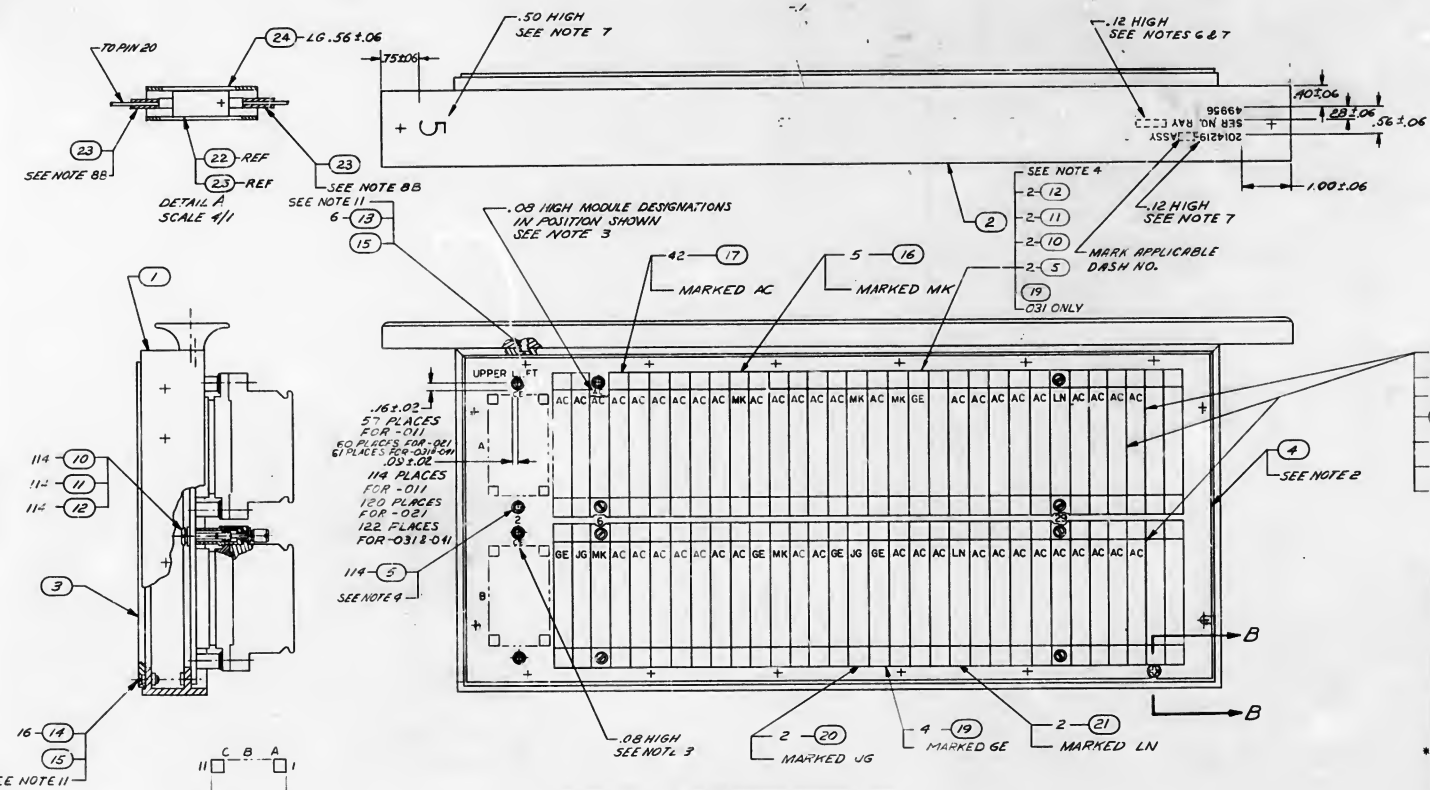
LOGIC PLATE ASSY NO. 4
LOGIC DRAWER NO. 1
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014218
SCALE 1/1 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

H 2014219

SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25059		
1	CHANGED PER CCA R25485 DR Z Bruno CHK'D White APPD	1/12-65	
—	CLASS B CHANGED PER CCA R25502		
A	CHANGED PER CCA R25621 DR CHK APPD		
B	CHANGED PER CCA R25639 DR CHK APPD		
C	CHANGED PER CCA R25711 AND CLASS A RELEASED PER TDRR 25972		
D	CHANGED PER TDRR 28103 DR CHK APPD		
E	CHANGED PER TDRR 28331 DR CHK APPD		
F	CHANGED PER TDRR 29329 DR CHK APPD PED		
G	CHANGED PER TDRR 30818 DR CHK APPD		
H	CHANGED PER TDRR 31281 DR CHK APPD		

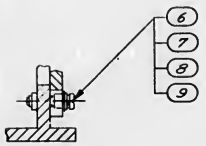


X	—	—	—	2016458	LOGIC DIAGRAM	REF
X	—	—	—	2016457	WIREWRAP MACH CARD	REF
—	X	—	—	2016433	LOGIC DIAGRAM	REF
—	X	—	—	2016434	WIREWRAP MACH CARD	REF
—	—	X	—	2016383	LOGIC DIAGRAM	REF
—	—	X	—	2016371	WIREWRAP MACH CARD	REF
—	—	—	X	2014107	LOGIC DIAGRAM	REF
—	—	—	X	2014089	WIREWRAP MACH. CARD	REF
1	1	1	1	MS15825-5	CAPACITOR, 750 μμF 500VDC	25
2.5	2.5	2.5	2.5	SEE NOTE 10	SLEEVING	24
AR	AR	AR	AR	1006776-197	SLEEVING, INSULATION	23
22	22	22	22	CS13AF010K	CAPACITOR, 1μF 35V	22
2	2	2	2	2014000-011	MODULE, BUFFERED FLIP FLOP	21
2	2	2	2	1014065-3	MODULE, RESISTOR	20
5	5	4	4	1014230	MODULE, INTERFACE RECEIVER	19
AR	AR	AR	AR	1006945-1	WIRE, ELECTRICAL	18
45	45	65	42	1014034	MODULE, NOR	17
5	5	5	5	1014096	MODULE, DRIVER	16
AR	AR	AR	AR	MIL-S-22473, GR-NV	SEALING & RETAINING COMPOUND	15
16	16	16	16	MS51959-15	SCREW, FLAT HD	14
6	6	6	6	MS51959-27	SCREW, FLAT HD	13
122	122	120	114	MS35338-79	WASHER, LOCK	12
122	122	120	114	1006997	WASHER, FLAT	11
122	122	120	114	MS51957-29	SCREW, PAN HD	10
16	16	16	16	1006986	WASHER, SHOULDERED, NYLON	9
16	16	16	16	MS35338-78	WASHER, LOCK	8
16	16	16	16	MS15795-803	WASHER, FLAT	7
16	16	16	16	MS51957-17	SCREW, PAN HD	6
122	122	120	114	1014212	STAND-OFF, PROGRAM	5
1	1	1	1	1006985-001	PLATE ASSY	4
1	1	1	1	1014026	COVER, CONN PLATE	3
1	1	1	1	1014007	SUPPORT, FRAME	2
1	1	1	1	1014014-2	FRAME	1
QTY REQD -041	QTY REQD -031	QTY REQD -021	QTY REQD -011	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

CHART A

REF DES	FIND NO.	FROM	TO	REMARKS
C2	22	5B8-2	5B8-20	
C3		5B16-2	5B16-20	
C4		5B13-5	5B13-20	
C5		5B13-19	5B11-20	
C6		5A2-11	5A2-20	
C7		5A14-7	5A14-20	
C8		5A16-2	5A16-20	
C9		5A17-2	5A17-20	
C10		5B17-9	5B19-20	
C11		5B2-9	5B1-20	
C12		5A20-15	5A20-20	
C13		5A11-13	5A11-20	
C14		5A2-8	5A4-20	
C15		5B3-11	5B3-20	
C16		5B3-9	5B5-20	
C17		5B1-15	5B1-20	
C18		5B21-9	5B20-20	
C19		5B32-8	5B32-20	
C20		5B7-2	5B7-20	
C21		5B3-1	5B2-20	
C22		5A29-15	5A29-20	
C23	22	5B24-3	5B24-20	
C1	25	5A9-7	5A10-20	



SECTION B-B
16 PLACES
SCALE 2/1

NOTES:
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO.4 USING FIND NO.19 PER 2014089 OR 2016371 OR 2016457 OR 2016457 & ND1002031
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047
5. AR DENOTES AS REQUIRED
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
8. AFTER MACHINE WIREWRAPPING PLATE, INSTALL FIND NO.22 & NO.25 PER CHART A & DETAIL A
8A. SOLDER PER ND1002071
8B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY PIN LOCATION AT ASSY
~~9. MIL-I-631 TYPE F FORM Ua GRADE a CLASS I CATEGORY C COLOR BLUE AWG SIZE NO.24 FOR FIND NO.23~~
10. MIL-I-631 TYPE F FORM Ua GRADE a CLASS I CATEGORY I COLOR CLEAR AWG SIZE NO.8 FOR FIND NO. 24
11. ASSEMBLE FIND NO.13 & FIND NO 14 USING FIND NO.15

* DENOTES LENGTH IN FEET

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70127

2014036			
NEXT ASSY	USED ON		
APPLICATION			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx ±.01 .xxx ±.005 ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-457
DRAWN DATE 1/12/65
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

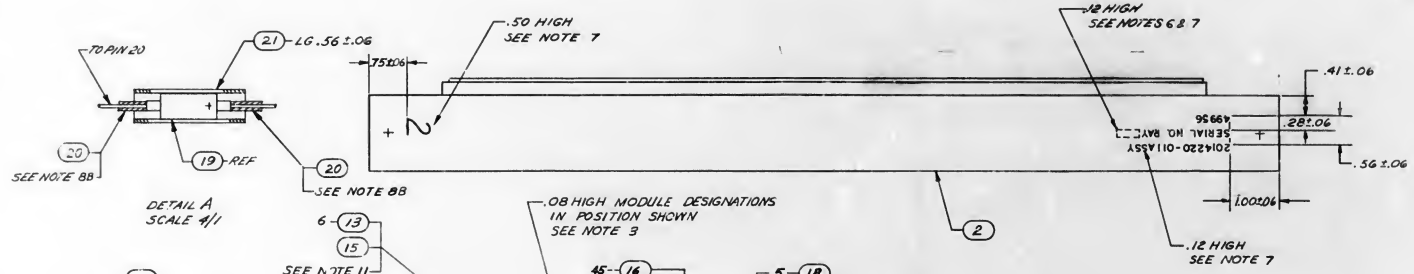
MANNED SPACECRAFT CENTER HOUSTON, TEXAS

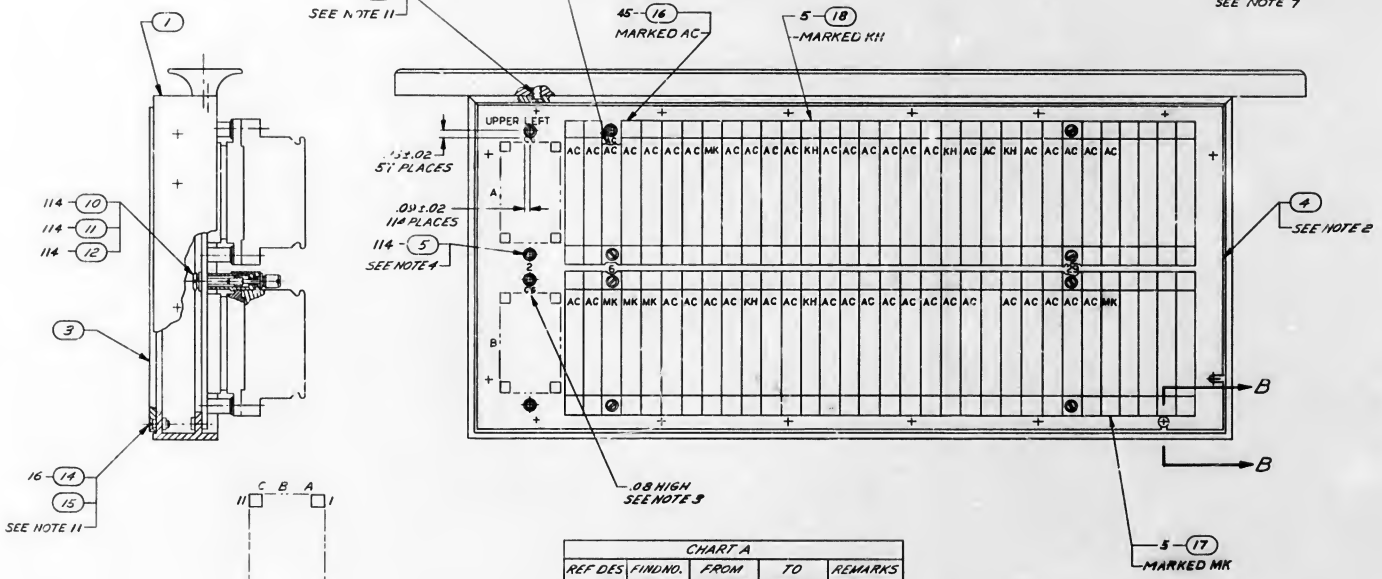
LOGIC PLATE ASSY NO.5
LOGIC DRAWER NO. 1
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	F	2014219

SCALE 1/1 WT SHEET 1 OF 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25059		
1	CHANGED PER CCA R25485 DR T Burns CHK APPD	11-13-67	
-	CLASS B CHANGED PER CCA R25502		
A	CHANGED PER CCA R25621 DR CHK APPD	1/11/68	
B	CHANGED PER CCA R25711 AND CLASS A RELEASED PER TDAR 25972	1/11/68	

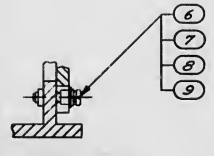




TYPICAL 60 PIN CONTACT GROUP DESIGNATIONS (REF ONLY)

CHART A

REF DES	FIND NO.	FROM	TO	REMARKS
C1	19	2B22-3	2B22-20	
C2	19	2B20-5	2B20-20	
C3	19	2A14-8	2A15-20	
C4	19	2A19-2	2A19-20	
C5	19	2A31-15	2A30-20	
C6	19	2B21-18	2B19-20	
C7	19	2A1-8	2A3-20	
C8	19	2A31-12	2A31-20	
C9	19	2B1-19	2B2-20	
C10	19	2B30-12	2B30-20	
C11	19	2B21-18	2B21-20	



SECTION B-B 16 PLACES SCALE 2/1

NOTES

1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO. 4 USING FIND NO 16 PER 2014092 & ND1002031
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047
5. AR DENOTES AS REQUIRED
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
8. AFTER MACHINE WIRE WRAPPING PLATE, INSTALL FIND NO. 19 PER CHART A & DETAIL A
   - 8A. SOLDER PER ND1002071
   - 8B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY PIN LOCATION AT ASSY
9. ~~MIL-I-631 TYPE F FORM II, GRADE A, CLASS I CATEGORY A, COLOR BLUE AWG SIZE NO. 24 FOR FIND NO. 20~~
10. MIL-I-631 TYPE F FORM II, GRADE A, CLASS I CATEGORY I COLOR CLEAR AWG SIZE NO. 8 FOR FIND NO. 21
11. ASSEMBLE FIND NO. 13 & FIND NO. 14 USING FIND NO. 15

* DENOTES LENGTH IN FEET

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	
-011			
	2014067	LOGIC FLOW DIAGRAM	REF
	2014092	WIREWRAP MACH. CARD	REF
AR	1006945-1	WIRE, ELECTRICAL	22
.6 *	SEE NOTE 10	SLEEVING	21
AR	1006776-197	SLEEVING, INSULATION	20
11	CS13AF010K	CAPACITOR 1uf 35 V	19
5	1014079	MODULE, GATED FLIP-FLOP	18
5	1014096	MODULE, DRIVER	17
45	1014084	MODULE, NOR	16
AR	MIL-S-22473, GR, NV	SEALING & RETAINING COMPOUND	15
18	MS51959-15	SCREW, FLAT HD	14
6	MS51959-25	SCREW, FLAT HD	13
114	MS35338-79	WASHER, LOCK	12
114	1006997	WASHER, FLAT	11
114	MS51957-29	SCREW, PAN HD	10
16	1006986	WASHER, SHOULDERED, NYLON	9
16	MS35338-78	WASHER, LOCK	8
16	MS15795-803	WASHER, FLAT	7
16	MS51957-17	SCREW, PAN HD	6
114	1014212	STAND-OFF, PROGRAM	5
1	1006935-001	PLATE ASSY	4
1	1014026	COVER, CONN PLATE	3
1	1014007	SUPPORT, FRAME	2
1	1014014-2	FRAME	1

2014037			
NEXT ASSY	USED ON		
APPLICATION			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS .xx ±.01, .xxx ±.005, ANGLES ±0°. DO NOT SCALE DRAWING. MATERIAL

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-427
DRAWN CHK DATE APPROVED
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

LOGIC PLATE ASSY NO. 2
LOGIC DRAWER NO. 2
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE F | DRAWING NO. 2014220
SCALE 1/1 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014220 B

2014223 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25059	10/65	
1	CHANGED PER CCA R25485 DR	11/66	
–	CLASS B CHANGED PER CCA R25502	1/67	
A	CHANGED PER CCA R25621 DR	4/67	
B	CHANGED PER CCA R25711 AND CLASS A RELEASED PER TDRR 25472	1/68	
C	CHANGED PER TDRR 29337 DR		

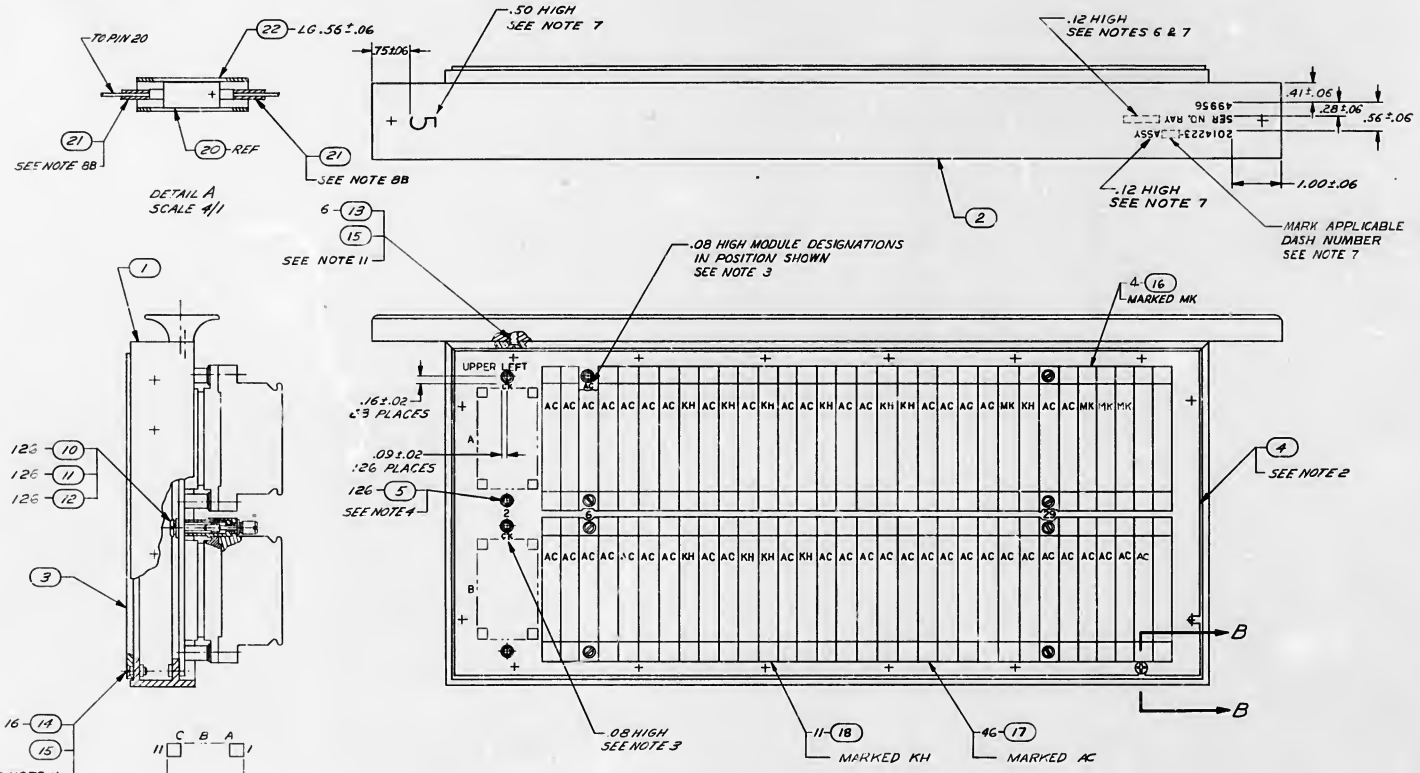
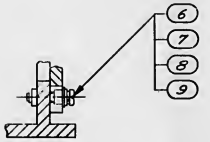


CHART A				
REF DES	FIND NO.	FROM	TO	REMARKS
C1	20	5B20-7	5B20-20	
C2	20	5B22-7	5B22-20	
C3	20	5B23-2	5B23-20	
C4	20	5B21-2	5B21-20	
C5	20	5B12-A	5B12-20	
C6	20	5B1-13	5B1-20	
C7	20	5B2-4	5B2-20	



SECTION B-B
16 PLACES
SCALE 2/1

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO. 4 USING FIND NO. 19 PER 2014095, 2016449 & NDI-02031
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047
5. AR DENOTES AS REQUIRED
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
8. AFTER MACHINE WIRE WRAPPING PLATE, INSTALL FIND NO. 20 PER CHART A & DETAIL A
8A. SOLDER PER ND1002071
8B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY PIN LOCATION AT ASSY
~~9. MIL-T-631 TYPE E FORM U2 GRADE 2 CLASS I CATEGORY I COLOR BLUE AWG SIZE NO 9 FOR FIND NO 22~~
10. MIL-T-631 TYPE E FORM U2 GRADE 2 CLASS I CATEGORY I COLOR CLEAR AWG SIZE NO 9 FOR FIND NO. 22
11. ASSEMBLE FIND NO. 13 & FIND NO. 14 USING FIND NO. 15

QTY REQD	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	–	2016450	LOGIC DIAGRAM	REF
	–	2016449	WIRE WRAP MACH CARD	REF
–		2014070	LOGIC DIAGRAM	REF
–		2014095	WIREWRAP MACH. CARD	REF
.7	.7	SEE NOTE 10	SLEEVING	22
AR	AR	1006776-197	SLEEVING, INSULATION	21
7	7	CS13AF010K	CAPACITOR, 1 uf 35V (10%)	20
AR	AR	1006945-1	WIRE, ELEC, INSUL, NO. 24 AWG, SOL. ID	19
11	11	1014079	MODULE, GATED FLIP FLOP	18
46	46	1014034	MODULE, NOR	17
4	4	1014096	MODULE, DRIVER	16
AR	AR	MIL-S-22473, GR-HV	SEALING & RETAINING COMPOUND	15
16	16	MS 51959-15	SCREW, FLAT HD	14
6	6	MS 51959-27	SCREW, FLAT HD	13
126	126	MS35338-79	WASHER, LOCK	12
126	126	1006997	WASHER, FLAT	11
126	126	MS51957-29	SCREW, PAN HD	10
16	16	1006983	WASHER, SHOULDERED, NYLON	9
16	16	MS35338-78	WASHER, LOCK	8
16	16	MS15795-803	WASHER, FLAT	7
16	16	MS51957-17	SCREW, PAN HD	6
126	126	1014212	STAND-OFF, PROGRAM	5
1	1	1006495-001	PLATE ASSY	4
1	1	1014026	COVER, CONN PLATE	3
1	1	1014007	SUPPORT, FRAME	2
1	1	1014014-2	FRAME	1

-021-01 LIST OF MATERIALS

* DENOTES LENGTH IN FEET

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014037		
NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX ±.01 .XXX ±.005 ANGLES ±1°
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS9-4065
DRAWN DATE 5/26/67
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

LOGIC PLATE ASSY NO. 5
LOGIC DRAWER NO. 2
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014223
SCALE 1/1 | WT | SHEET 1 OF 1

2014224 D

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 35059		
1	CHANGED PER CCA R25200 OR C CHK APPD		
2	CHANGED PER CCA R 25485 DR CHK APPD		
-	CLASS B CHANGED PER CCA R25502		
A	CHANGED PER CCA R25621 DR CHK APPD P.E.D		
B	CHANGED PER CCA R25711 DR CHK APPD P.E.D		
C	CHANGED PER CCA R25751 AND CLASS A RELEASED PER TDRR 25472		
D	CHANGED PER TDRR 26101 DR CHK APPD PED		

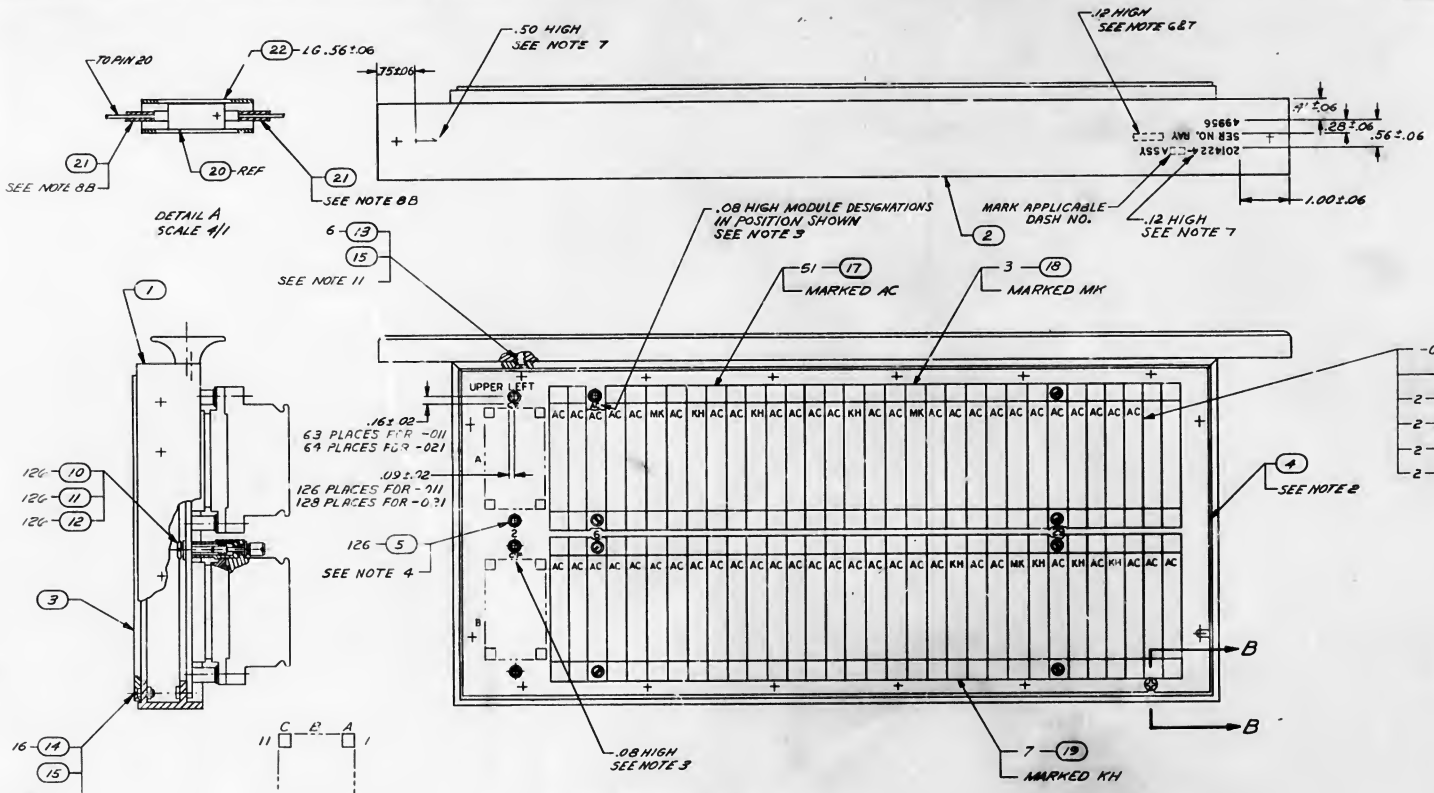


CHART A

REF DES	FIND NO.	FROM	TO	REMARKS
C1	20	1B21-8	1B21-20	
C2	20	1A7-9	1A7-20	
C3	20	1B29-5	1B29-20	
C4	20	1A26-6	1A26-20	
C5	20	1A3-19	1A2-20	
C6	20	1B1-19	1B2-20	
C7	20	1A28-19	1A29-20	
C8	20	1B26-8	1B28-20	
C9	20	1B1-15	1B1-20	
C10	20	1B25-15	1B25-20	
C11	20	1A23-17	1A23-20	
C12	20	1A17-4	1A17-20	
C13	20	1A8-6	1A9-20	
C14	20	1A2-1	1A3-20	
C15	20	1B26-6	1B26-20	

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO. 4 USING FIND NO. 16 PER 2014091 OR 2016373 & ND1002031
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047
5. AR DENOTES AS REQUIRED
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
8. AFTER MACHINE WIRE WRAPPING PLATE, INSTALL FIND NO. 20 PER CHART A & DETAIL A
   8A. SOLDER PER ND1002071
   8B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY PIN LOCATION AT ASSY
~~9. MIL-I-631 TYPE F, FORM U, GRADE 2, CLASS I, CATEGORY I COLOR BLUE AWG SIZE NO 24 FOR FIND NO. 21~~
10. MIL-I-631 TYPE F FORM U, GRADE 2, CLASS I CATEGORY I COLOR CLEAR AWG SIZE NO. 8 FOR FIND NO. 22
11. ASSEMBLE FIND NO. 14 & FIND NO 13 USING FIND NO 15

* DENOTES LENGTH IN FEET

QTY REQ'D	QTY REQ'D	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		2016370	LOGIC DIAGRAM	REF
		2016373	WIREWRAP MACH. CARD	REF
		2014088	LOGIC DIAGRAM	REF
		2014091	WIREWRAP MACH. CARD	REF
1.4	1.4	SEE NOTE 10	SLEEVING	22
AR	AR	1006776-197	SLEEVING, INSULATION	21
15	15	CS13AF010K	CAPACITOR, 1uf 35 V	20
7	7	NH4079	MODULE, GATED FLIP-FLOP	19
3	3	NH4096	MODULE, DRIVER	18
52	51	NH4034	MODULE, NOR	17
AR	AR	1006945-1	WIRE, ELECTRICAL	16
AR	AR	MIL-S-22473, GR-MV	SEALING & RETAINING COMPOUND	15
16	16	MS51959-15	SCREW, FLAT HD	14
6	6	MS51959-27	SCREW, FLAT HD	13
128	126	MS35338-79	WASHER, LOCK	12
128	126	1006997	WASHER, FLAT	11
128	126	MS51957-29	SCREW, PAN HD	10
16	16	1006986	WASHER, SHOULDERED, NYLON	9
16	16	MS35338-78	WASHER, LOCK	8
16	16	MS15795-803	WASHER, FLAT	7
16	16	MS51957-17	SCREW, PAN HD	6
128	126	1014212	STAND-OFF, PROGRAM	5
1	1	1006495-001	PLATE ASSY	4
1	1	1014026	COVER, CONN PLATE	3
1	1	1014007	SUPPORT, FRAME	2
1	1	1014014-2	FRAME	1
-021	-011		LIST OF MATERIALS	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .--- .--- .--- ANGLES ° °	DO NOT SCALE DRAWING MATERIAL
2014037			
NEXT ASSY	USED ON		
APPLICATION			

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED PER MIL-D-70327

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS9-1200
DRAWN H. Rose DATE 5-Dec 65
CHECKED
APPROVED
APPROVED
APPROVED
MFR APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

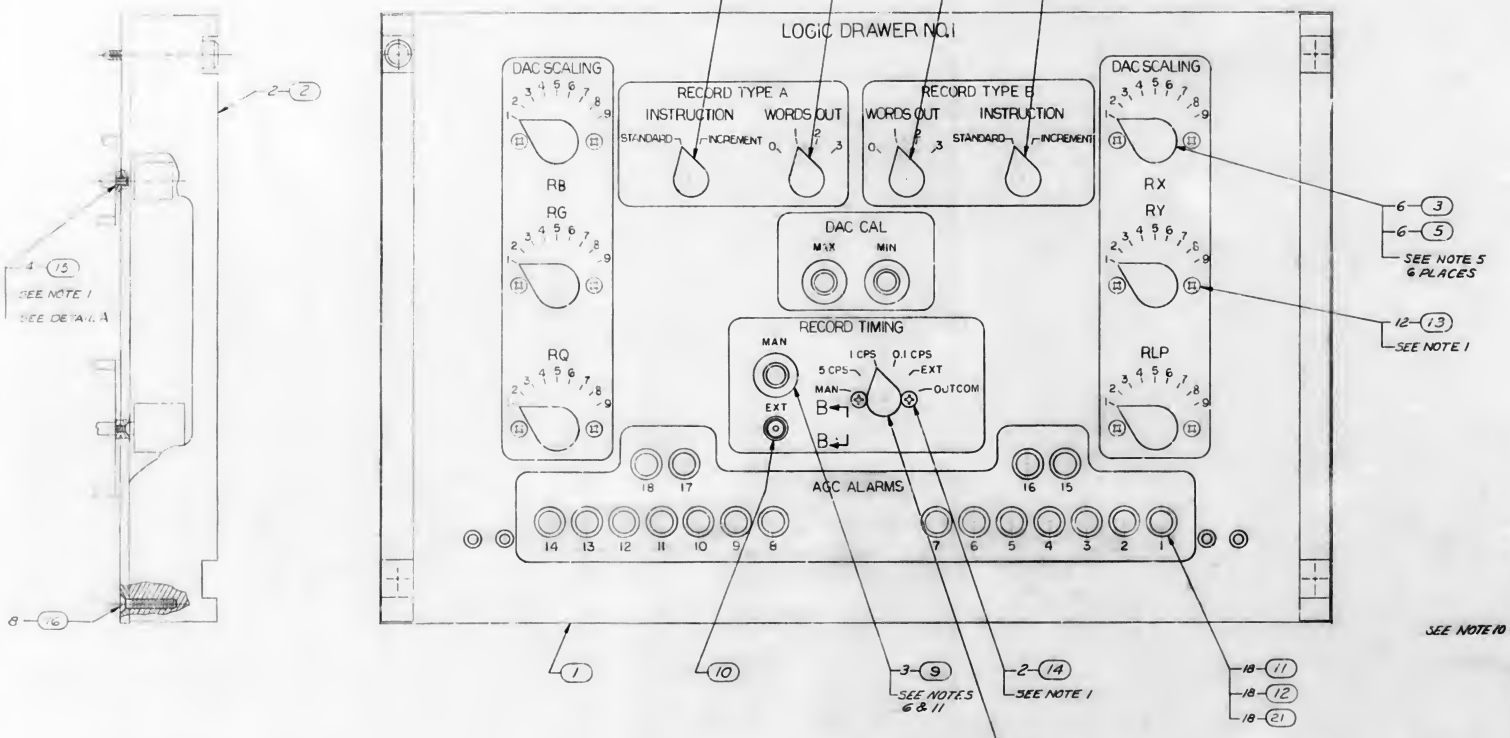
LOGIC PLATE ASSY NO. 1
LOGIC DRAWER NO. 2
COMPUTER TEST SET

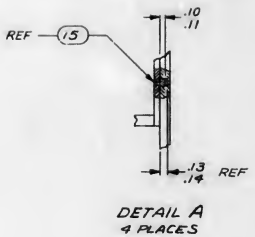
SIZE	PRINT NO.	REV.
C	1149956	F

FSCM NO.	DRAWING NO.
	2014224

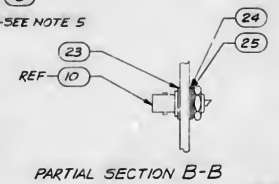
SCALE 1/1 WT SHEET 1 OF 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 225069		
1	CHANGE PER CCA R25301 DR W. Kelly CHK APPD		
2	CHANGE PER CCA R25475 DR CHK APPD		
–	CLASS B CHANGED PER CCAR 25502		
A	CHANGED PER CCA R25547 DR CHK C.D. APPD		
B	CHANGED PER CCA R25626 DR CHK APPD		
C	CHANGED PER CCA R25651 AND CLASS A RELEASED PER TDRR 25772		
D	CHANGED PER TDRR 26504 DR CHK APPD		





DETAIL A
4 PLACES



PARTIAL SECTION B-B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	2014111	SCHEMATIC	REF
	2016119	LEAD, ELECTRICAL	REF
1	AN960C616L	WASHER, FLAT	25
1	1006982-10	WASHER, NYLON	24
1	1020376	WASHER, INSULATING	23
AR	1006458-004	TAPE, LACING	22
18	1006401-003	LENS, CAP	21
80.1	MIL-W-16878/4 GZZ	WIRE, ELEC (WHT)	20
1	2014110-(N)	WIRING HARNESS	19
12	1006236-1	TERMINAL LUG	18
AR	MIL-S-22473, GR HV	SEALING & RETAINING COMPOUND	17
8	MS51959-45	SCREW, MACH, FLAT HD	16
4	NS51022-22	SET SCREW	15
2	MS51959-28	SCREW, MACH, FLAT HD	14
12	MS51953-43	SCREW, MACH, FLAT HD	13
18	1006407-002	LAMP	12
18	1006481	LAMP, DRIVER	11
1	NS35179-1094A	CONNECTOR, RECP., BNC	10
3	MS25089-3C	SWITCH, PUSHBUTTON	9
1	1006891-2	SWITCH, ROTARY	8
2	1006933-3	SWITCH, ROTARY	7
2	1006953-4	SWITCH, ROTARY	6
8	1006894-2	SWITCH, ROTARY	5
5	NS91528-1K2B	KNOB, CONTROL, PLASTIC	4
6	NS91528-2K2B	KNOB, CONTROL, PLASTIC	3
2	1014215-6	HANDLE ASSY	2
1	2014075	PANEL, FRONT	1

SEE NOTE 10 *

* DENOTES LENGTH IN FEET

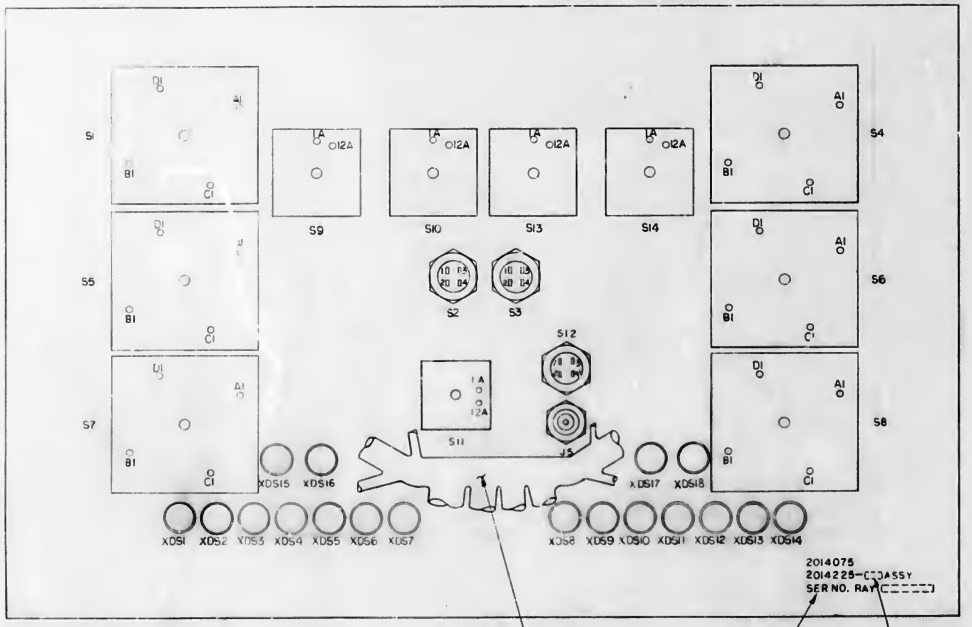
LIST OF MATERIALS

NOTES:
1. ASSEMBLE FIND NO.13, 14, & 15 USING FIND NO. 17
2. AR DENOTES AS REQUIRED
3. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
4. FOR FABRICATION SEE ND1002032, EXCEPT USE FIND NO. 22
5. DISCARD 14TG SCREWS SUPPLIED WITH FIND NO. 5, 6, 7 & 8
6. REMOVE EXISTING TERMINAL LUGS ON FIND NO. 9 & USE FIND NO. 18
7. SERIALIZE PER ND1002023
8. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
9. STRIP ALL LEADS .50 ± .06 & TIN PER ND1002071
10. THIS WIRE IS USED IN CONJUNCTION WITH 2014113
11. APPLY FIND 17 TO INTERNAL THREADS OF FIND 9

2014036		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .xx ± .01, DECIMALS .xxx ± .005, ANGLES ± 0° 30'	RAYTHEON CO. LEXINGTON, MASS. CONTRACT NO. NAS 9-497 DRAWN DATE 10/24/63 CHECKED APPROVAL APPROVAL APPROVAL NASA APPROVAL MIT APPROVAL MIT APPROVAL
NEXT ASSY	USED ON	DO NOT SCALE DRAWING MATERIAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
APPLICATION			FRONT PANEL ASSEMBLY, LOGIC DRAWER NO.1 COMPUTER TEST SET
			CODE IDENT NO. 49956 SIZE F DRAWING AND PART NO. 2014225 SCALE 1/1 WT SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25064		
1	CHANGE PER CCA R25301 DR CHK APPD		
2	CHANGE PER CCA R25475 DR CHK APPD	8/6/65	
—	CLASS B CHANGED PER CCA R25502		
A	CHANGED PER CCA R25647 DR. CHK C.O. APPD PED	9/16	
B	CHANGED PER CCA R25626 DR CHK APPD	9/7	
C	CHANGED PER CCA R25651 AND CLASS A RELEASED PER TDRR 25472	11/65	
D	CHANGED PER TDRR 26504 DR CHK APPD	3/4/66	



TYP REAR VIEW
XDS1 - XDS18
SCALE : NONE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ANGLES
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. S. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

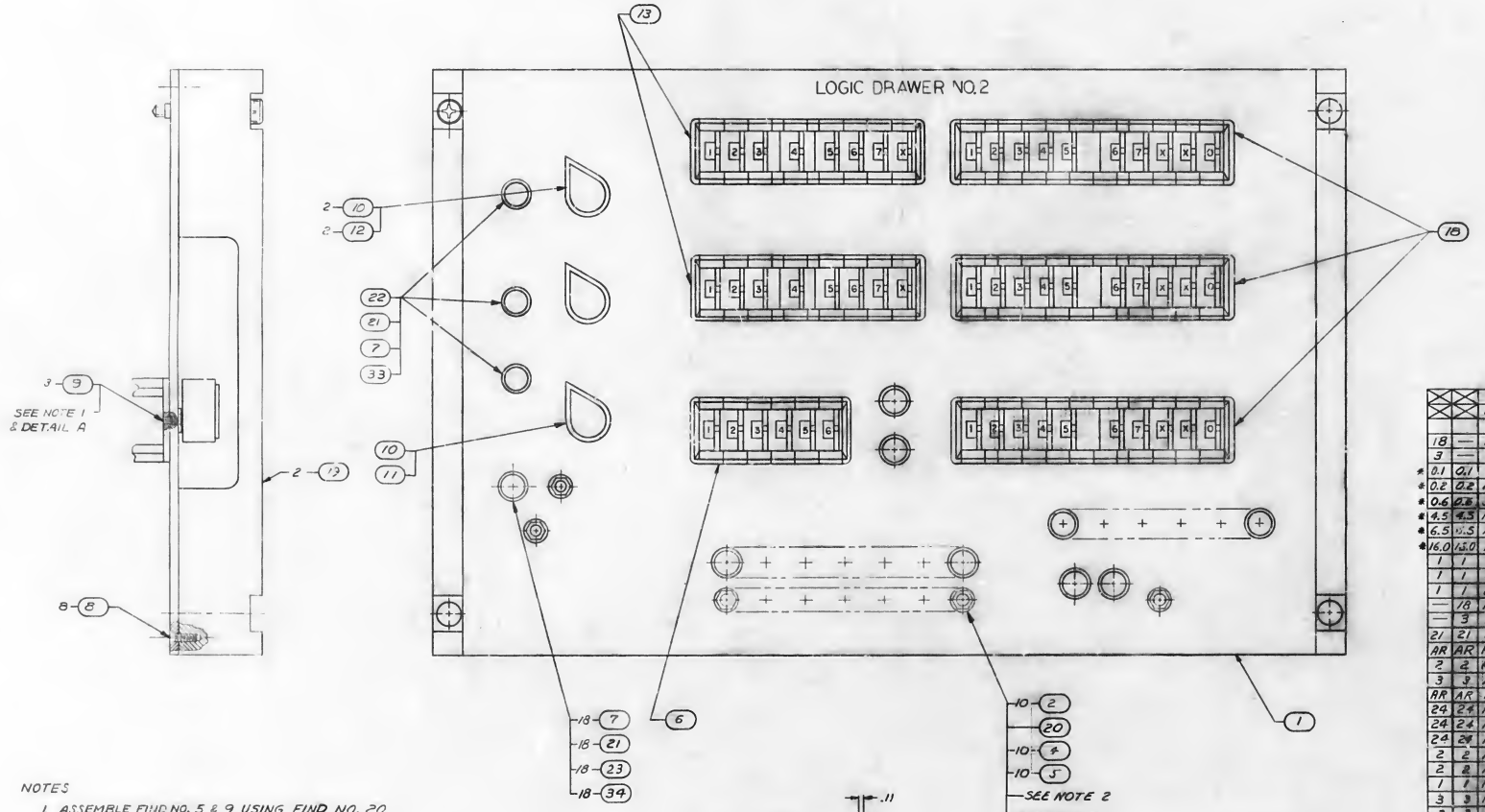
FRONT PANEL ASSEMBLY
LOGIC DRAWER NO. 1
COMPUTER TEST SET

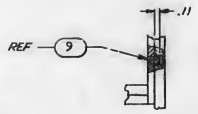
CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014225
SCALE 1/1 | WT | SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014226 F

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25059		
1	CHANGED PER CCA R25127A DR CHK APPD		
2	CHANGED PER CCA R25269 DR CHK APPD	4/16/67	
–	CLASS B CHANGED PER CCA R25502		
A	CHANGED PER CCA R25520 DR CHK APPD		
B	CHANGED PER CCA R25662 AND CLASS A RELEASED PER TDRR	1/16/68	
C	CHANGED PER TDRR 26285 DR CHK APPD PCD	9/19/68	
D	CHANGED PER TDRR 26251 DR CHK APPD	9/23/68	
E	CHANGED PER TDRR 26542 DR CHK APPD PCD	12/12/68	
F	CHANGED PER TDRR 28101 DR CHK APPD PCD	8/16/69	





DETAIL A
3 PLACES

NOTES

1. ASSEMBLE FIND NO. 5 & 9 USING FIND NO. 20
2. REMOVE EXISTING HARDWARE FROM FIND NO. 5
3. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
4. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER NC1002019 USING BLACK INK 1006371-10
5. SERIALIZE PER NDI002023
6. SOLDER PER NDI002071
7. AR DENOTES 'AS REQUIRED'
8. MARK CONDUCTOR IDENTIFICATION PER NDI002019
9. M-W-343, TYPE S, SOFT, COATED, AWG SIZE 22 FOR FIND NO. 30
10. SLEEVE COND. IDENT, 091, USING FIND NO. 32
11. SLEEVE COND. IDENT, 033 & 0126, USING FIND NO. 31
12. AFTER INSTALLATION OF HARNESSES FORM LEADS TO EACH SECTION OF SWITCHES S1, S2, S3, S4, S5 & S6 INTO LEGS AND SPOT TIE AS SHOWN USING FIND 17

* DENOTES LENGTH IN FEET

QTY PER ASSY	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
			LIST OF MATERIALS	
		2014076	SCHEMATIC	REF
		2014068	LEAD ELECTRICAL	REF
18	—	1006446-003	LENS, PANEL LIGHT	34
3	—	1006446-005	LENS, PANEL LIGHT	33
* 0.1	0.1	IC06776-46	SLEEVING, BLK	32
* 0.2	0.2	1006776-E1	SLEEVING, WHT	31
* 0.6	0.6	SEE NOTE 9	WIRE, ELECTRICAL	30
* 4.5	4.5	MIL-W-16878/4,E22	WIRE, ELECTRICAL, BLACK	29
* 6.5	6.5	MIL-W-16878/4,E22	WIRE, ELECTRICAL, WHITE	28
* 16.0	16.0	MIL-W-16878/4,E22	WIRE, ELECTRICAL, WHITE	27
1	1	2014124-011	WIRING HARNESS 'B'	26
1	1	2014139-011	WIRING HARNESS 'C'	25
1	1	2014118-011	WIRING HARNESS 'A'	24
—	18	1006401-003	LENS	23
—	3	1006401-005	LENS	22
21	21	1006491	LIGHT, INDICATOR	21
AR	AR	MIL-S-22473, GRADE HV	SEALING & RETAINING COMP	20
2	2	2014215-6	HANDLE ASSY	19
3	3	1006478-006	SWITCH, BINARY, 10 DIGIT	18
RR	AR	1006455-006	TAPE, LACING	17
24	24	MS35338-78	WASHER, LOCK	16
24	24	MS15795-804	WASHER, PLAIN	15
24	24	MS35649-44	NUT, HEX	14
2	2	1006478-005	SWITCH, BINARY, 8 DIGIT	13
2	2	1006835-2	SWITCH, ROTARY	12
1	1	1006835-1	SWITCH, ROTARY	11
3	3	MS91520-2P2B	KNOB, POINTER	10
3	3	MS51022-24	SETSCREW, HEX SOCKET	9
8	8	MS51959-45	SCREW, MACH	8
21	21	1006407-002	LAMP	7
1	1	1006478-004	SWITCH, BINARY, 6 DIGIT	6
10	10	MS24655-23	SWITCH, TOGGLE	5
10	10	AN960C3JGL	WASHER, FLAT	4
—	AR	[illegible]	[illegible]	3
10	10	1006397-3	NUT, ADAPTER	2
1	1	2014072	PANEL, FRONT	1
-021	-011			

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .xx ±.02 DECIMALS .xxx ± ANGLES ±	RAYTHEON CO. LEXINGTON, MASS.
		DO NOT SCALE DRAWING	CONTRACT NO. NAS9-497
		MATERIAL	DRAWN A.S. DATE 4/4/67
			CHECKED J.W. DATE 4/7/67
			APPROVAL P.E. DATE 4/11/67
			APPROVAL D.H. DATE 4/14/67
2014037			APPROVAL J.H. DATE 4/16/67
NEXT ASSY	USED ON		NASA APPROVAL A.C. METZGER
APPLICATION			MIT APPROVAL [illegible]
			MIT APPROVAL C. Stark

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRONT PANEL ASSY
LOGIC DRAWER NO. 2
COMPUTER TEST SET

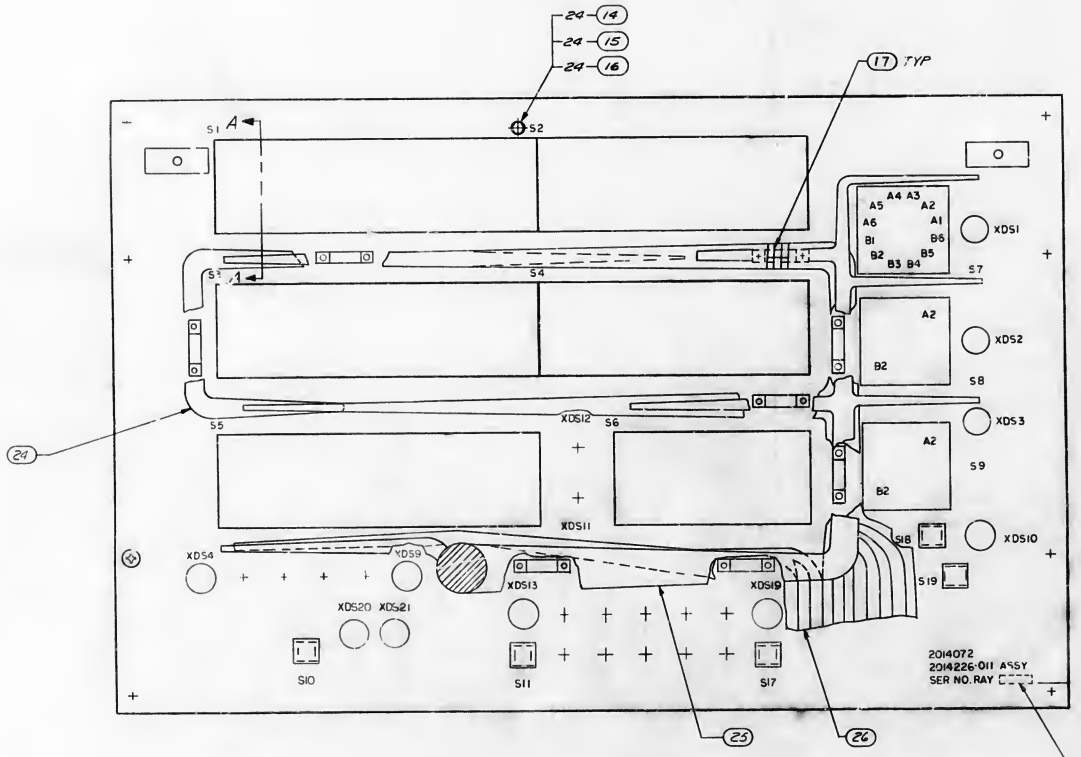
CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	F	2014226

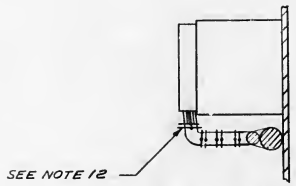
SCALE 1/1 | WT — | SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014226 F

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25059	2/26/66	
1	CHANGED PER CCA R25187A DR CHK APPD	2/26/66	
2	CHANGED PER CCA R25269 DR CHK APPD	3/15/66	
–	CLASS B CHANGED PER CCA R25302	3/17/66	
A	CHANGED PER CCA R25620 DR CHK APPD	3/28/66	
B	CHANGED PER CCA R25662 AND CLASS A RELEASED PER TDRR 25972	3/31/66	
C	CHANGED PER TDRR 25889 DR CHK APPD	3/29/66	
D	CHANGED PER TDRR 26290 DR CHK APPD	5/5/66	
E	CHANGED PER TDRR 26762 DR CHK APPD P&D	5/12/66	
F	CHANGED PER TDRR 28101 DR CHK APPD P&D	8/5/66	





SECTION A-A
SCALE: NONE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ±.03 DECIMALS .xxx ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

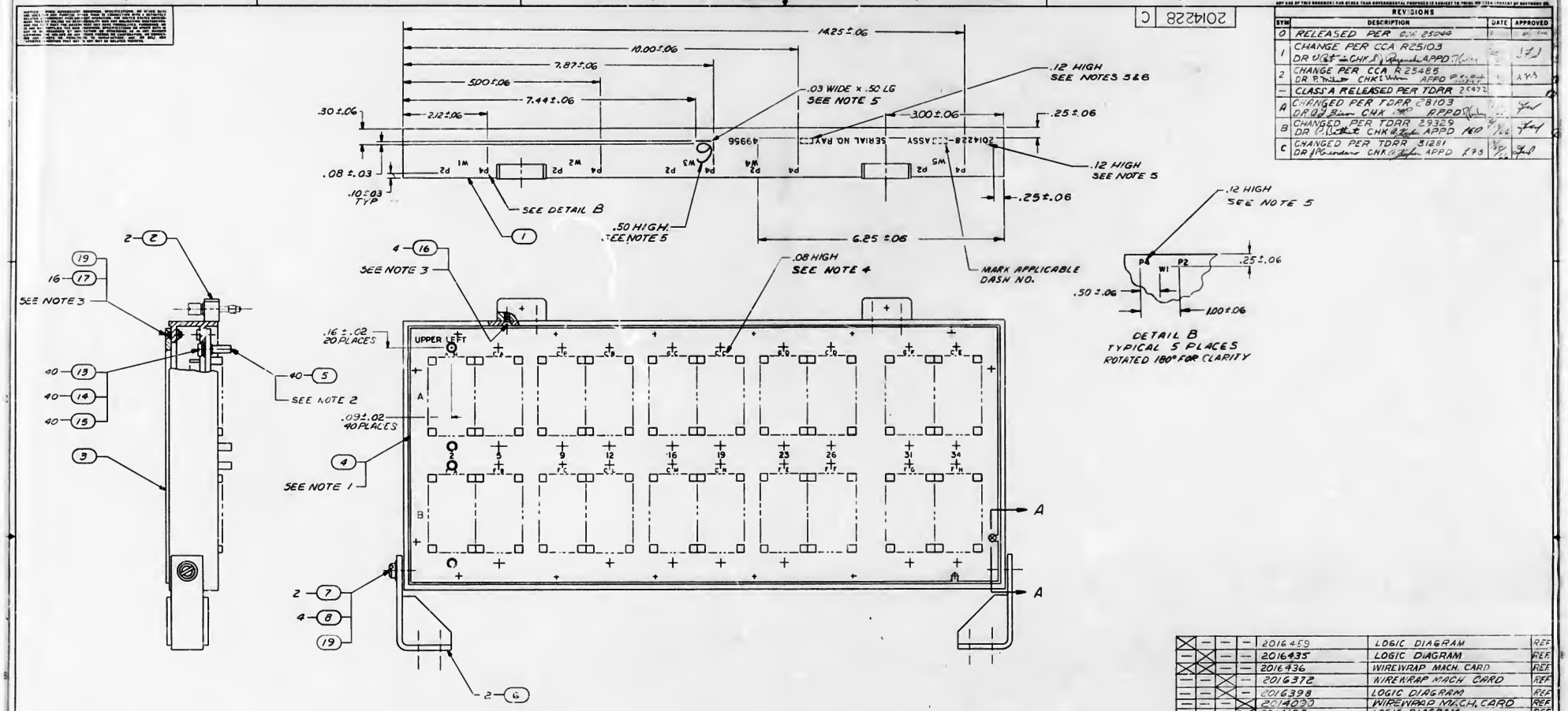
NEXT ASSY | USED ON
APPLICATION

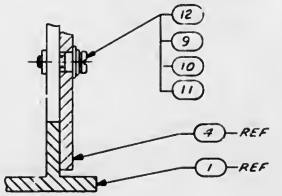
RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE APPV 2/25
CHECKED
APPROVAL P&D 2/24/66
APPROVAL
NASA APPROVAL A.C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

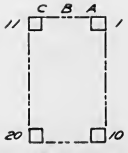
FRONT PANEL ASSY
LOGIC DRAWER NO.2
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014226
SCALE 1" | WT – | SHEET 2 OF 2





PARTIAL SECTION A-A
SCALE 2/1
16 PLACES



TYPICAL 60 PIN CONTACT GROUP DESIGNATIONS (REF ONLY)

NOTES
1. WIREWRAP FIND NO. 4 USING FIND NO. 18 PER 2014090 OR 2016372 OR 2014436 & ND1002031
2. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047
3. ASSEMBLE FIND NO. 7, 16 AND 17 USING FIND NO. 19
4. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
5. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
6. SERIALIZE PER ND1002023
7. AR DENOTES "AS REQUIRED"
8. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
9. SLEEVE LEADS OF FIND NO. 20 (C1) USING FIND NO. 21 (FOR -041)
10. AFTER MACHINE WIRE WRAPPING PLATE INSTALL FIND NO. 20 (C1) BETWEEN PINS A5-6 & A10-20
    A. SOLDER PER ND1002071
    B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY CAPACITOR LOCATION AT ASSY

QTY REQD -041	QTY REQD -031	QTY REQD -021	QTY REQD -011	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
—	—	—	—	2016459	LOGIC DIAGRAM	REF
—	—	—	—	2016435	LOGIC DIAGRAM	REF
—	—	—	—	2016436	WIREWRAP MACH. CARD	REF
—	—	—	—	2016372	WIREWRAP MACH. CARD	REF
—	—	—	—	2016398	LOGIC DIAGRAM	REF
—	—	—	—	2014090	WIREWRAP MACH. CARD	REF
—	—	—	—	2014195	LOGIC DIAGRAM	REF
AR	—	—	—	1006776-135	SLEEVING, INSULATION	21
1	—	—	—	CY20C242J	CAPACITOR, 2400 PF, 500V	20
AR	AR	AR	AR	MIL-S-22473, GR. HV	COMPOUND, SEALING & RETAINING	19
AR	AR	AR	AR	1006945-1	WIRE, ELECTRICAL	18
16	16	16	16	MS51959-15	SCREW, FLAT HD	17
4	4	4	4	MS51959-14	SCREW, FLAT HD	16
40	40	40	40	NS535338-79	WASHER, LOCK	15
40	40	40	40	1005997	WASHER, FLAT	14
40	40	40	40	MS51957-29	SCREW, PAN HD	13
16	16	16	16	MS51957-17	SCREW, PAN HD	12
16	16	16	16	MS15795-803	WASHER, FLAT	11
16	16	16	16	MS35338-78	WASHER, LOCK	10
16	16	16	16	1006986	WASHER, SHOULDERED, NYLON	9
4	4	4	4	1006982-8	WASHER, NYLON	8
2	2	2	2	1014003	SCREW, SHOULDER	7
2	2	2	2	1014006	BRACKET, PIVOT	6
40	40	40	40	1014212	STAND OFF, PROGRAM	5
1	1	1	1	1006495-002	PLATE ASSY	4
1	1	1	1	1014026	COVER, CONN PLATE	3
2	2	2	2	1014013	RETAINER, CAPTIVE SCREW	2
1	1	1	1	1014014-1	FRAME	1

LIST OF MATERIALS

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER ECR 25046		
1	CHANGE PER CCA R25103 DR V.G. CHK S. APPD		
2	CHANGE PER CCA R 25485 DR P. CHK APPD		
—	CLASS A RELEASED PER TDRR 2C472		
A	CHANGED PER TDRR C8103 DR CHK APPD		
B	CHANGED PER TDRR 89329 DR CHK APPD		
C	CHANGED PER TDRR 91281 DR CHK APPD		

2014228 C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH
2014036 NEXT ASSY USED ON APPLICATION

RAYTHEON CO. LEXINGTON, MASS. CONTRACT NONAS 8-457

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

INTERCONNECTION PLATE ASSY PLATE NO. 6 LOGIC DRAWER NO. 1 COMPUTER TEST SET

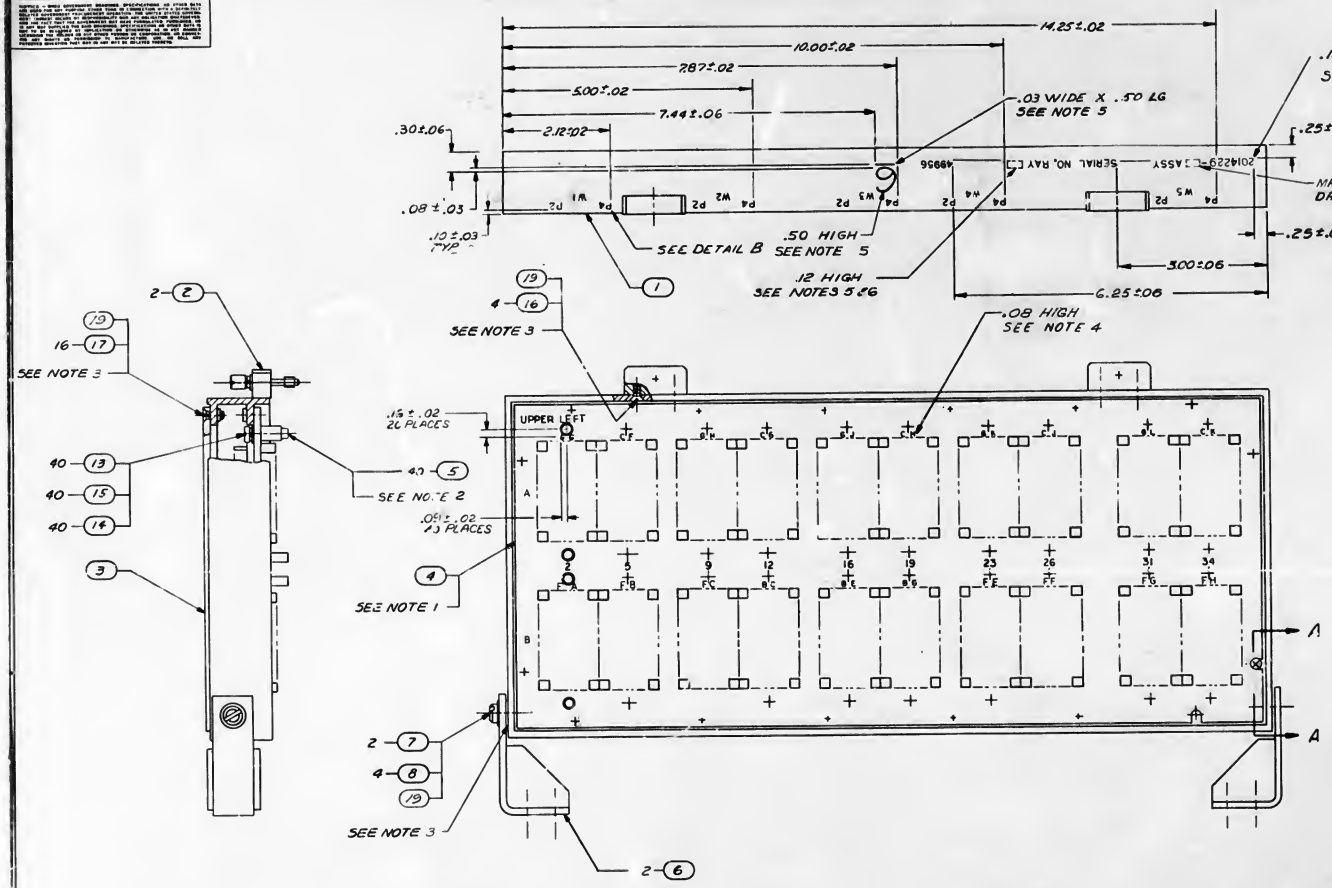
CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014228

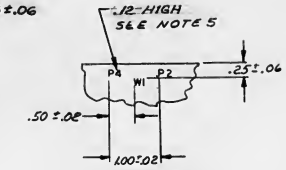
SCALE 1/1 | WT | SHT 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014229 C

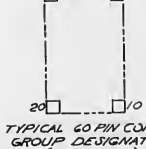
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25044	7/64	
1	CHANGE PER CCA R25485 DR P. Trabert CHK Watson APPD	11/64	
–	CLASS B NO CHANGE PER CCAR25502	1/65	
A	CHANGE PER CCA R25737 AND CLASS A RELEASED PER TDRR 25472	1/66	
B	CHANGED PER TDRR 28101 DR CHK APPD	1/68	
C	CHANGED PER TDRR 28881 DR CHK APPD	1/69	



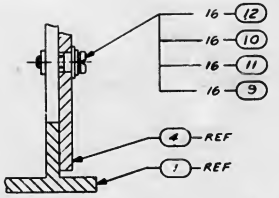


DETAIL B
TYPICAL 5 PLACES
ROTATED 180° FOR CLARITY

NOTES:
1. WIREWRAP FIND NO. 4 USING FIND NO. 18 PER 2014036 OR 2016374 & ND1002031
2. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DRAWING NO. 1014047
3. ASSEMBLE FIND NO. 7, 16, & 17 USING FIND NO. 19
4. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 100627I-10
5. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 100627I-1
6. SERIALIZE PER ND1002023
7. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
8. AR DENOTES "AS REQUIRED"



TYPICAL 60 PIN CONTACT GROUP DESIGNATIONS (REF ONLY)



PARTIAL SECTION A-A
SCALE 2/1

QTY REQD	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
–	–	2016374	WIREWRAP MACH CARD	REF
–	–	2016393	LOGIC DIAGRAM	REF
–	–	2014096	WIREWRAP MACH. CARD	REF
–	–	2014196	LOGIC DIAGRAM	REF
AR	AR	MIL-S-22473 GR. HV	COMPOUND, SEALING & RETAINING	19
AR	AR	1006945-1	WIRE, ELEC, INSUL. #24 AWG SOLID	18
16	16	MS51959-15	SCREW, FLAT HD	17
4	4	MS51959-14	SCREW, FLAT HD	16
40	40	MS35338-79	WASHER, LOCK	15
40	40	1006997	WASHER, FLAT	14
40	40	MS51957-29	SCREW, PAN HD	13
16	16	MS51957-17	SCREW, PAN HD	12
16	16	MS15795-803	WASHER, FLAT	11
16	16	MS35338-78	WASHER, LOCK	10
16	16	1006986	WASHER, SHOULDER, NYLON	9
4	4	1006982-8	WASHER, NYLON	8
2	2	1014003	SCREW, SHOULDER	7
2	2	1014006	BRACKET, PIVOT	6
40	40	1014212	STAND OFF, PROGRAM	5
1	1	1006 [illegible] 002	PLATE ASSY	4
1	1	1014026	COVER, CONN PLATE	3
2	2	1014019	RETAINER, CAPTIVE SCREW	2
1	1	1014014-1	FRAME	1

LIST OF MATERIALS

-021-011

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	RAYTHEON CO. LEXINGTON, MASS.
		DO NOT SCALE THIS DRAWING	MATERIAL
2014037		HEAT TREATMENT	
NEXT ASSY	USED ON	FINAL FINISH	
APPLICATION			

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

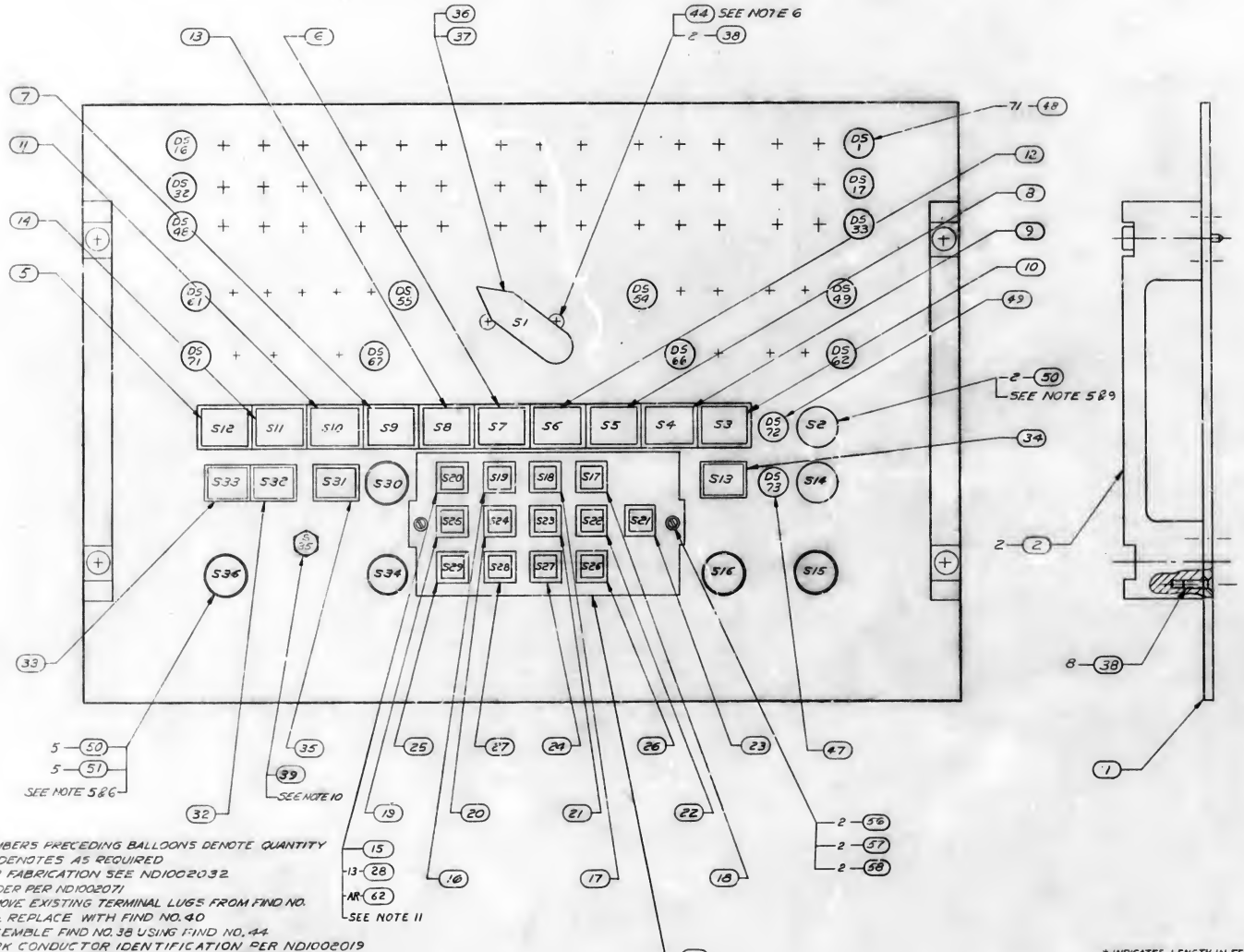
INTERCONNECTION PLATE ASSY
LOGIC DRAWER NO2 PLATE NO 6
COMPUTER TEST SET

CODE IDENT NO	SIZE	NASA DRAWING NO
49956	F	2014229

SCALE 1/1 WT SHEET 1 OF 1

2014231 D

SYM	REVISIONS DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25767		
1	REVISED PER CCA 25377 DR CHKD APPD		
2	CHANGED PER CCA R25526 DR CHKD APPD		
-	CLASS B CHANGED PER CCA R25502		
A	CHANGED PER CCA R25620 AND CLASS A RELEASED PER TDRR 25972		
B	CHANGED PER TDRR 26496 DR CHK APPD		
C	CHANGED PER TDRR 26495 DR CHKD APPD P.C.D.		
D	CHANGED PER TDRR 26639 DR CHKD APPD P.C.D.		



FOR CONTINUATION OF LIST OF MATL SEE SHEET 2

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
5	1006865-1	GUARD, PUSHBUTTON	51
7	MS25089-3C	SWITCH, PUSH	50
1	1006401-003	LENS, CAP	49
71	1006401-005	LENS, CAP	48
1	1006401-001	LENS, CAP	47
73	1006481	LIGHT, INDICATOR	46
10	MS17821-1-9	STRAP, CABLE	45
AR	MIL-S-22473 GR HV	SEALING & RETAINING COMP	44
1	2014121-011	WIRING HARNESS "B"	43
1	2014120-011	WIRING HARNESS "A"	42
*55.0	MIL-W-16878/4 E22	WIRE, ELECTRICAL (WHITE)	41
28	1006236-1	TERMINAL LUG	40
1	MS25069-23	SWITCH, TOGGLE	39
10	MS51959-45	SCREW, MACH, CSK FLAT HD	38
1	1006926	KNOB, BAR	37
1	1006833-1	SWITCH, ROTARY	36
1	1006405-057	LENS, MARKED	35
1	1006405-056	LENS, MARKED	34
1	1006405-055	LENS, MARKED	33
1	1006405-054	LENS, MARKED	32
4	1006405-003	DISPLAY SCREEN	31
4	1006405-002	COLOR FILTER, WHITE	30
4	1006405-001	SWITCH, PUSH, BASIC UNIT	29
13	1006677	SWITCH, PUSH	28
1	1014474-13	PUSH BUTTON	27
1	1014474-12	PUSH BUTTON	26
1	1014474-11	PUSH BUTTON	25
1	1014474-10	PUSH BUTTON	24
1	1014474-9	PUSH BUTTON	23
1	1014474-8	PUSH BUTTON	22
1	1014474-7	PUSH BUTTON	21
1	1014474-6	PUSH BUTTON	20
1	1014474-5	PUSH BUTTON	19
1	1014474-4	PUSH BUTTON	18
1	1014474-3	PUSH BUTTON	17
1	1014474-2	PUSH BUTTON	16
1	1014474-1	PUSH BUTTON	15
1	1006471-010	LENS, MARKED	14
1	1006471-015		13
1	1006471-012		12
1	1006471-011		11
1	1006471-009		10
1	1006471-008		9
1	1006471-007		8
1	1006471-006		7
1	1006471-005		6
1	1006471-004	LENS, MARKED	5
40	1006471-003	LAMP BOT, AMBER	4
10	1006471-001	SWITCH, PUSH, BASIC UNIT	3
2	1014292	HANDLE ASSY	2
1	2014230	PANEL, FRONT	1

-011 LIST OF MATERIALS

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. AR DENOTES AS REQUIRED
3. FOR FABRICATION SEE ND1002032
4. SOLDER PER ND1002071
5. REMOVE EXISTING TERMINAL LUGS FROM FIND NO. 50 & REPLACE WITH FIND NO. 40
6. ASSEMBLE FIND NO. 38 USING FIND NO. 44
7. MARK CONDUCTOR IDENTIFICATION PER ND1002019
8. STRIP ALL LEADS .50±.12 & TIN PER ND1002071 UNLESS OTHERWISE SPECIFIED
9. APPLY FIND 44 TO INTERNAL THREADS OF FIND 50
10. REMOVE EXISTING SCREWS FROM TERMINAL LUGS OF FIND NO. 39
11. BOND FIND 15 THRU FIND 27 TO FIND 28 USING FIND 62

*INDICATES LENGTH IN FEET

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx ± DECIMALS .xxx ± ANGLES °
DO NOT SCALE DRAWING
MATERIAL

2014041
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-4327
DRAWN DATE 2 MAY 65
CHECKED DATE 2 MAY 65
APPROVAL DATE 6 MAY 65
APPROVAL DATE 6 MAY 65
NASA APPROVAL DATE 7 MAY 65
MIT APPROVAL DATE 7 MAY 65
MIT APPROVAL DATE 7 MAY 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRONT PANEL ASSY
PROGRAMMER & MONITOR
COMPUTER TEST SET

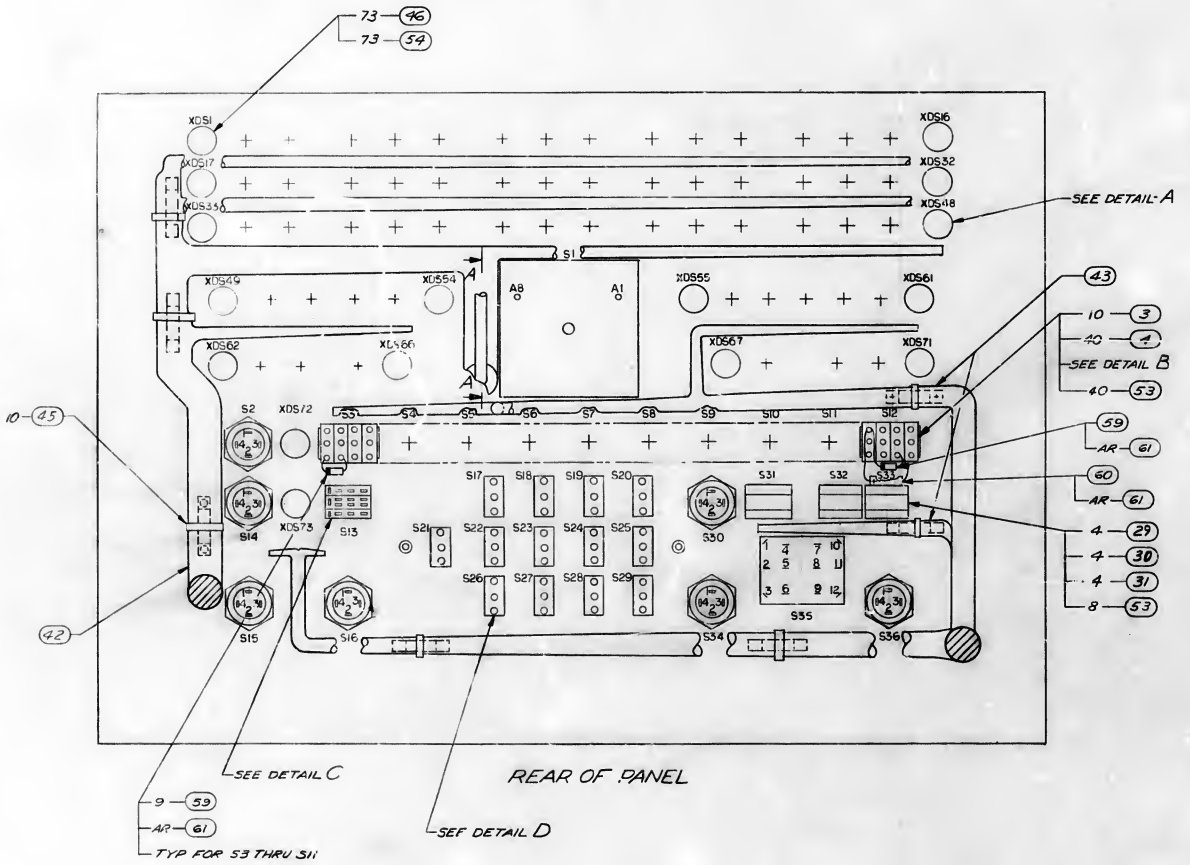
CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014231
SCALE 1/1 | WT | SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014231 D

2014231 D

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25167		
1	REVISED PER CCA 25377 DR CHK APPD		
2	CHANGED PER CCA R25528 DR CHKD APPD		
-	CLASS B CHANGED PER CCA R25502		
A	CHANGED PER CCA R25620 AND CLASS A RELEASED PER TDRR 25472		
B	CHANGED PER TDRR 26996 DR ID CHK APPD		
C	CHANGED PER TDRR 26995 DR CHK APPD PED		
D	CHANGED PER TDRR 26699 DR CHK APPD		

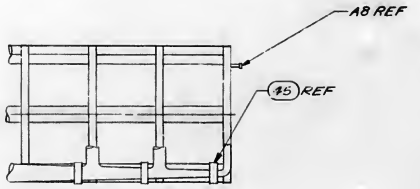


DETAIL-A
TYP FOR XDS1 THRU XDS73
SCALE: NONE

DETAIL-B
TYP FOR S3 THRU S12
SCALE: NONE

DETAIL-C
TYP FOR S13, S31 THRU S33
SCALE: NONE

DETAIL-D
TYP FOR S17 THRU S29
SCALE: NONE



VIEW A-A

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	MIL-A-5092 TYPE III	ADHESIVE	62
* 1.2	1006776-197	SLEEVING	61
1	CS13BF685K	CAP, 6.8 μF, ±10%, 35V	60
10	1006731-000	DIODE	59
2	MS15795-803	WASHER, FLAT	58
2	MS35338-78	WASHER, LOCK	57
2	MS51957-17	SCREW, PAN HEAD	56
X	2014112	SCHEMATIC	REF
X	2014122	LEAD ELECTRICAL	REF
1	2016315	COVER, KEYBOARD	55
73	1006407-002	LAMP	54
48	1006407-003	LAMP	53
* 18	MIL-W-16878/4 E22	WIRE, ELECTRICAL (BLACK)	52
011		LIST OF MATERIALS	

* INDICATES LENGTH IN FEET

NEXT ASSY	USED ON	APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx ±, .xxx ±, ANGLES °
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRONT PANEL ASSY
PROGRAMMER & MONITOR
COMPUTER TEST SET

CODE IDENT. NO.	SIZE	NASA DRAWING NO.
49956	F	2014231

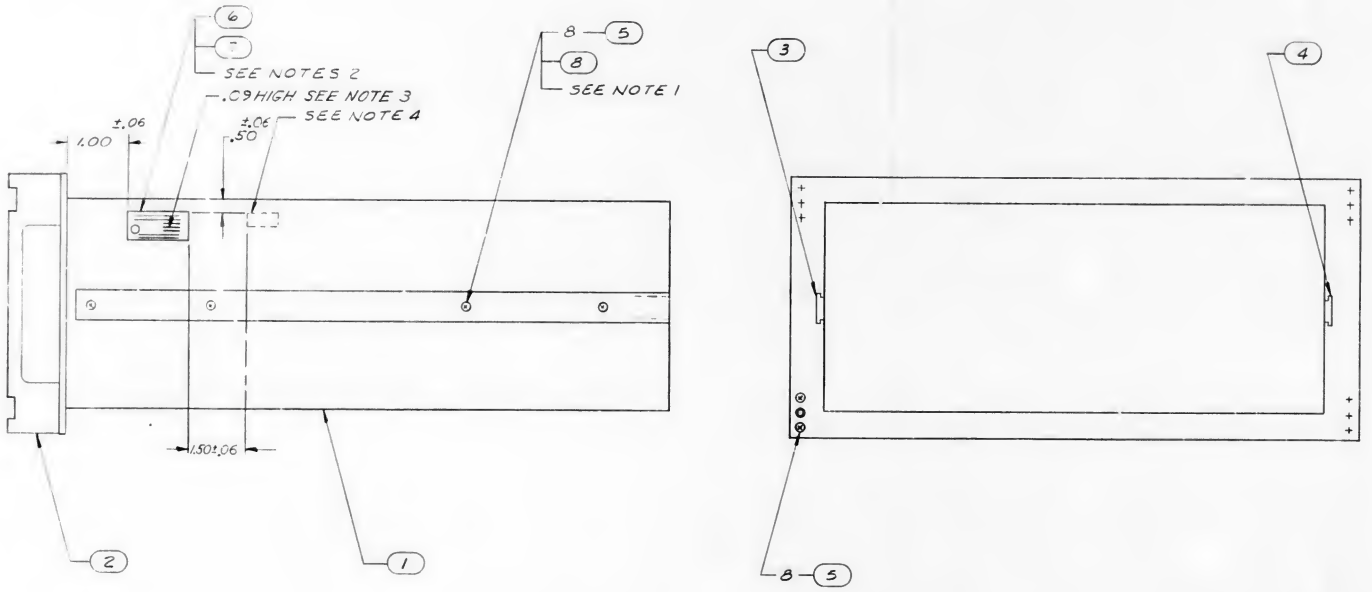
SCALE 1/1 WT SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014231 D

2014232 –

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER ECA 25042	7/9/65	G Johnson
–	CLASS A RELEASED PER TDRR 25472		



NOTES

1. ASSEMBLE FIND NO. 5 USING FIND NO. 8
2. ASSEMBLE FIND NO. 6 USING FIND NO. 7
3. SERIALIZE PER ND1002023
4. MARK APPROX WEIGHT IN LBS .25 HIGH NORMAL GOTHIC CHARACTERS PER ND1002019 USING BLACK INK 1006271-10 IN POSITION SHOWN

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	MIL-S-22473, GR. HV	SEALING & RETAINING COMPOUND	8
AR	MIL-A-5092 TYPE II	CEMENT	7
1	1004260-224	PLATE, IDENT	6
16	MS51959-44	SCREW, FLAT HD	5
1	1006930-6	SLIDE, LH CHASSIS SECTION	4
1	1006930-5	SLIDE, RH CHASSIS SECTION	3
2	1014215-4	HANDLE ASSY	2
1	1006937	OSCILLOSCOPE	1
-011	LIST OF MATERIALS		

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .xx ± .xxx ± ANGLES ±	RAYTHEON CO. LEXINGTON, MASS.
			CONTRACT NO. NAS 9-497
			DRAWN R Floyd DATE 25MAY65
			CHECKED J.K. Langlois 6/18/65
			APPROVAL C.C. Dale 7/9/65
		DO NOT SCALE DRAWING	APPROVAL
		MATERIAL	APPROVAL
2014042			NASA APPROVAL A. C. METZGER
NEXT ASSY	USED ON		MIT APPROVAL
APPLICATION			MIT APPROVAL C. Bradley 7/9/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

OSCILLOSCOPE ASSY
COMPUTER TEST SET

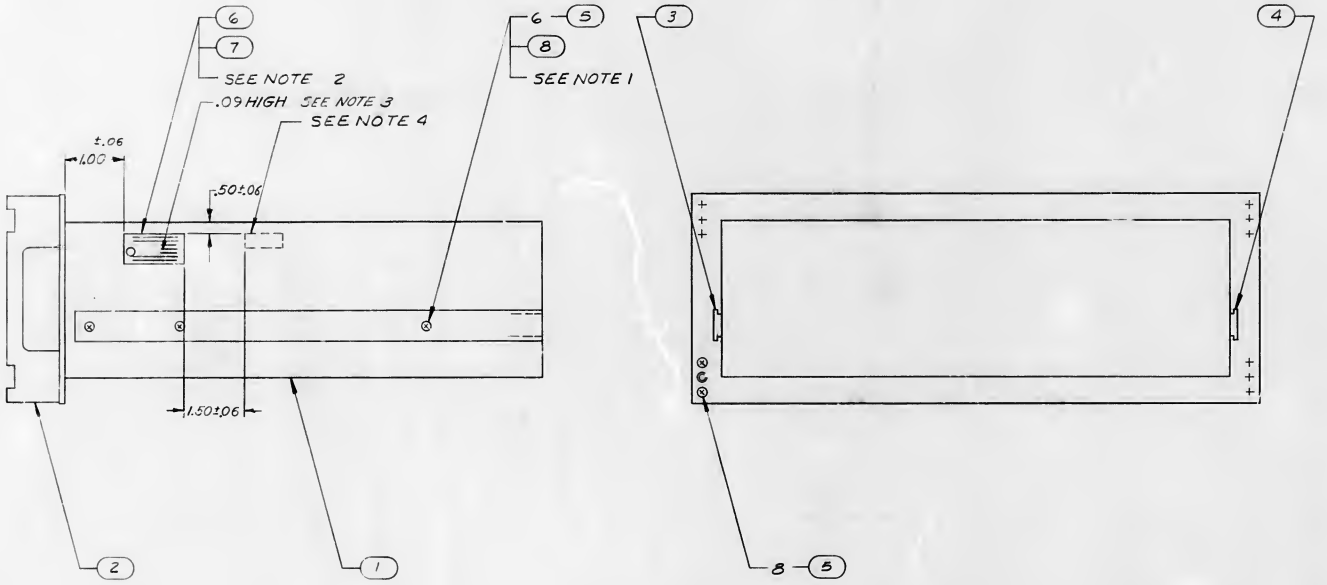
CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	2014232
SCALE 1/2	WT	SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014232 –

2014234 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER ECA 25092	7/9/65	O Hirsch
—	CLASS A RELEASED PER TDRR 75472		
A	CHANGED PER TDRR 26242 DR B.B. Garcia CHK'D APP'D	7/7/66	



NOTES

1. ASSEMBLE FIND NO. 5 USING FIND NO. 8
2. ASSEMBLE FIND NO. 6 USING FIND NO. 7.
3. SERIALIZE PER ND1002023
4. MARK APPROX WEIGHT IN LBS .25 HIGH NORMAL GOTHIC CHARACTERS PER ND1002019 USING WHITE INK 1006271-1 IN POSITION SHOWN

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	MIL-S-22473, GR. HV	SEALING & RETAINING COMPOUND	8
AR	MIL-A-5092 TYPE II	CEMENT	7
1	1004260-226	PLATE, IDENT	6
14	MS51959-45	SCREW, FLAT HD	5
1	1006930-4	SLIDE, LH CHASSIS SECTION	4
1	1006930-3	SLIDE, RH CHASSIS SECTION	3
2	1014215-3	HANDLE ASSY	2
1	1006466	POWER SUPPLY	1

-011 LIST OF MATERIALS

2014042		
NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ± DECIMALS .xxx ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN K Klenk DATE 25 MAY 65
CHECKED B.B. Garcia 6/2/65
APPROVAL P.C. Dube 7/8/65
APPROVAL B.B. Garcia 7/8/65
APPROVAL [illegible] 7/8/65
NASA APPROVAL A.S. Mertzlin
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

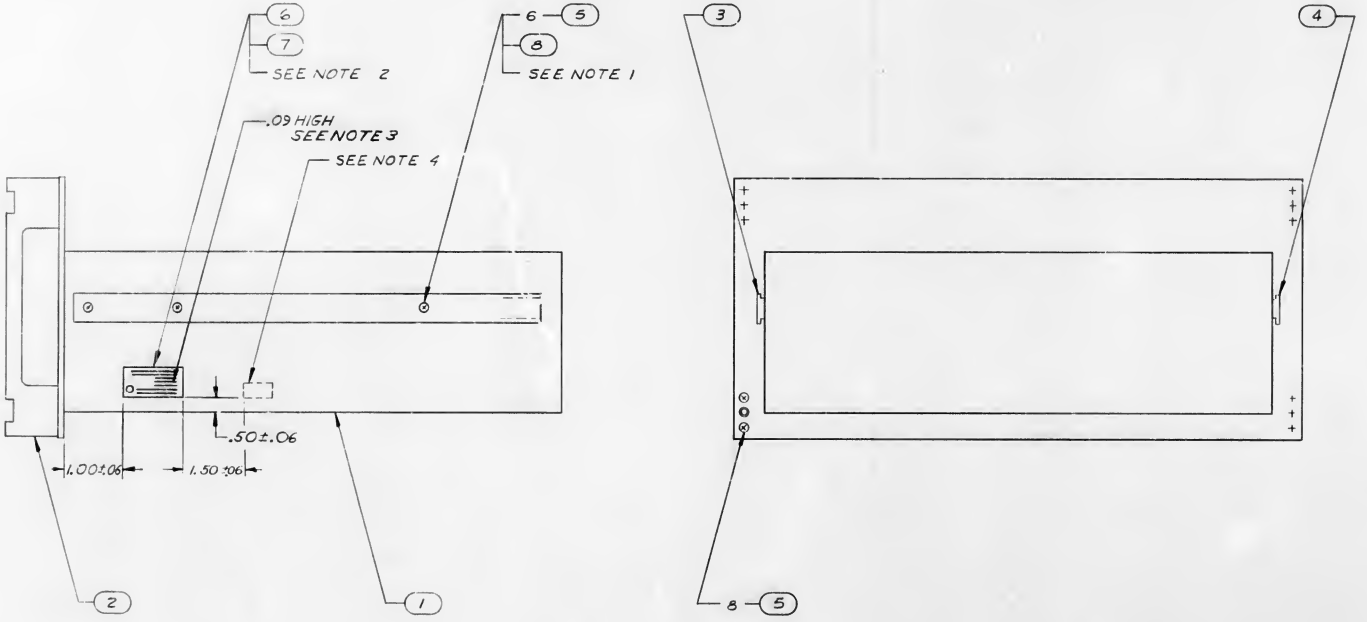
POWER SUPPLY 3VDC ASSY
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	2014234
SCALE 1/2	WT	SHEET 1 OF 1

2014234 A

2014235 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 85092	7/26/65	
-	CLASS A RELEASED PER TDRR 23472		
A	CHANGED PER TDRR 26242 DR [illegible] CHK [illegible] APPD [illegible]	2/1/66	



NOTES:

1. ASSEMBLE FIND NO. 5 USING FIND NO. 8
2. ASSEMBLE FIND NO. 6 USING FIND NO. 7
3. SERIALIZE PER ND1002023
4. MARK APPROX WEIGHT IN LBS .25 HIGH NORMAL GOTHIC CHARACTERS PER ND1002019 USING WHITE INK 1006271-1 IN POSITION SHOWN

QTY REQ'D	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	MIL-S-22473, GR. HV	SEALING & RETAINING COMPOUND	8
AR	MIL-A-5092 TYPE II	CEMENT	7
1	1004260-221	PLATE IDENT	6
14	MS51959-45	SCREW, FLAT HD	5
1	1006930-4	SLIDE, LH CHASSIS SECTION	4
1	1006930-3	SLIDE, RH CHASSIS SECTION	3
2	1014215-4	HANDLE ASSY	2
1	1006464	POWER SUPPLY	1

-011 LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .XX ± .XXX DECIMALS ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

2014042
NEXT ASSY | USED ON
APPLICATION

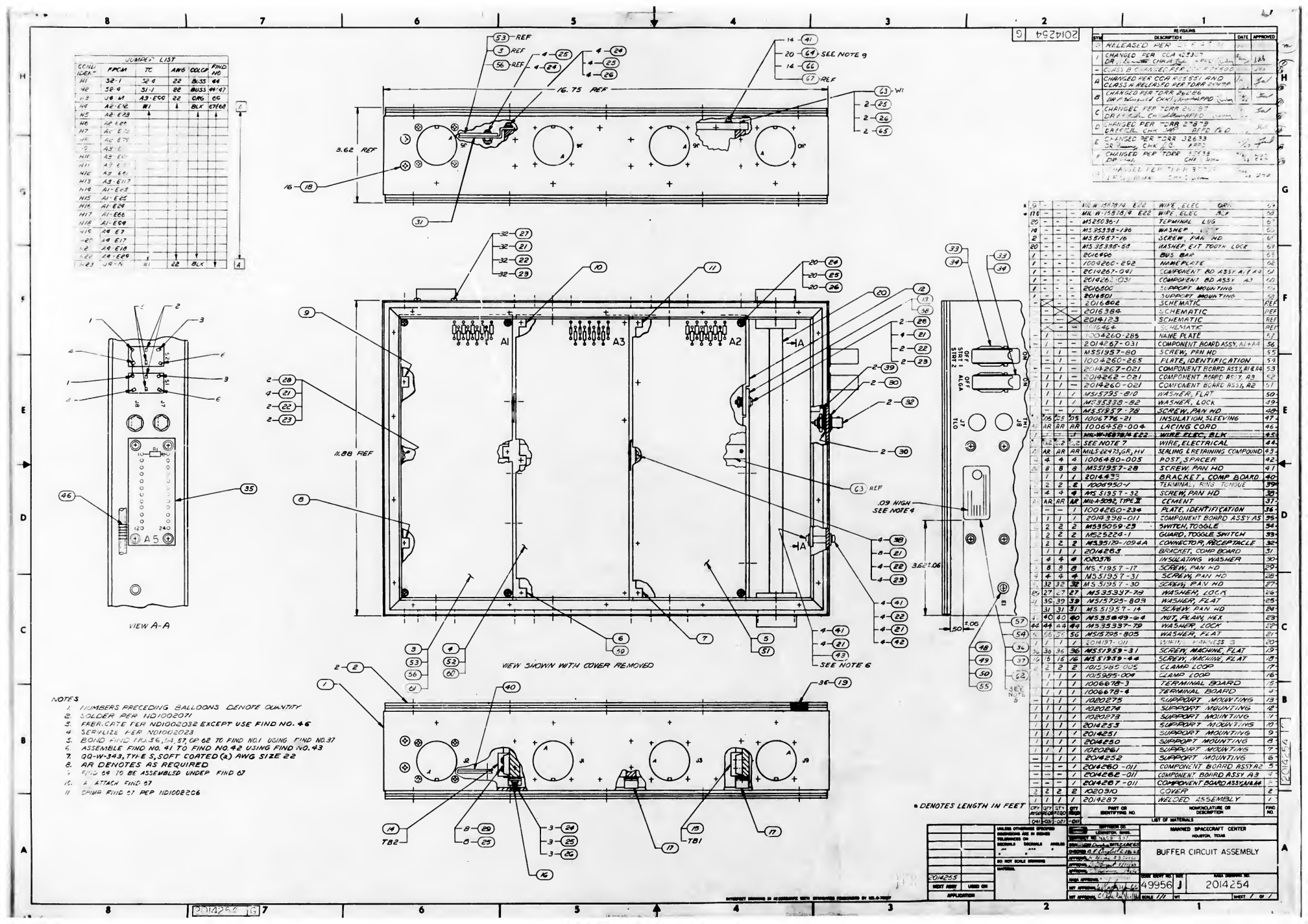
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-437
DRAWN R. Flood DATE 25 MAY 65
CHECKED R. V. Bingley 6/8/65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible] 7/8/65
NASA APPROVAL A.C. Metzger
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY 10,13,28 VDC ASSY
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE D | NASA DRAWING NO. 2014235
SCALE 1/2 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-7G327


JUMPER LIST
CONN IDENT
FROM
TO
AWG
COLOR
FIND NO
VIEW A-A
VIEW SHOWN WITH COVER REMOVED
SEE NOTE 6
SEE NOTE 5
.09 NIGH SEE NOTE 4
11.88 REF
16.75 REF
3.62 REF
3.62±.06
5.06
.50
* DENOTES LENGTH IN FEET
NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. SOLDER PER ND1002071
3. FABRICATE PER ND1002032 EXCEPT USE FIND NO. 46
4. SERIALIZE PER ND1002023
5. BOND FIND NOS 36, 54, 57, OR 62 TO FIND NO.1 USING FIND NO.37
6. ASSEMBLE FIND NO. 41 TO FIND NO.42 USING FIND NO.43
7. QQ-W-343, TYPE S, SOFT COATED (a) AWG SIZE 22
8. AR DENOTES AS REQUIRED
9. FIND 64 TO BE ASSEMBLED UNDER FIND 67
10. ∠ ATTACH FIND 67
11. CRIMP FIND 67 PER ND1008206
REVISIONS
DESCRIPTION
DATE
APPROVED
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
BUFFER CIRCUIT ASSEMBLY
2014254
2014255
LIST OF MATERIALS

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
F	CLASS A RELEASED PER TDRR 26632	7/15/66	G.K.
G	CHANGED PER TDRR 27976 DR G. Sears CHK C. Devine APPD T. Conley	8 May 67	[illegible]
H	CHANGED PER TDRR 30570 DR J.P. Lenard CHK G. Taylor APPD R.T.B.	8/31/67	[illegible]
J	CHANGED PER TDRR 32632 DR R.H. CHK J.C. APPD	1/17/68	[illegible]

J 2014255

NOTE

1. SET(2014255-011) IS USED DURING G&N TEST FOR INTERCONNECTING GROUND SUPPORT EQUIPMENT AND APOLLO GUIDANCE COMPUTERS PER AGC/GSE INTERCONNECTION DWGS 2014359, 2014360 & 2014460
2. SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL THE REQUIREMENTS OF PS 2014255
3. SET(2014255-021) IS USED DURING G&N TEST FOR INTERCONNECTING GROUND SUPPORT EQUIPMENT AND APOLLO GUIDANCE COMPUTERS PER AGC/GSE INTERCONNECTION DWGS 2016405, 2016417 AND 2016418
4. SET(2014255-031&041)IS USED DURING G&N TEST FOR INTERCONNECTING GROUND SUPPORT EQUIPMENT AND APOLLO GUIDANCE COMPUTERS PER AGC/GSE INTERCONNECTION DWG 2016405, 2016417 & 2016418

QTY REQD -041	QTY REQD -031	QTY REQD -021	QTY REQD -011	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	—	—	—	2014254-031	BUFFER CIRCUIT ASSY	19
1	1	—	—	2014137-021	CABLE ASSY W226	18
X	X	X	—	2016418	AGC/GSE INTERCONN BLK I (100)	REF
X	X	X	—	2016417	AGC/GSE INTERCONN BLK II	
X	X	X	—	2016405	AGC/GSE INTERCONN LEM	REF
—	1	1	—	2014254-021	BUFFER CIRCUIT ASSY	17
—	—	X	X	2014360	AGC/GSE INTERCONN BLK I-100	REF
—	—	X	X	2014359	AGC/GSE INTERCONN BLK II	REF
—	—	X	X	2014460	AGC/GSE INTERCONN LEM	REF
—	—	—	1	MS16995-43	SCREW, SOCKET HEAD	16
—	—	—	1	MS15795-810	WASHER, FLAT	15
1	1	1	1	2016334-011	AGC/PSA/SC ADAPTER ASSY	14
2	2	2	2	UG306 A/U	ADAPTER RT ANGLE, BNC	13
—	—	—	1	2014254-011	BUFFER CIRCUIT ASSY	12
1	1	1	1	2014392-011	SELF TEST ASSY	11
1	1	1	1	2014482-011	CABLE ASSY W234	10
1	1	1	1	2016360-011	W265	9
1	1	1	1	2014483-011	W233	8
1	1	1	1	2014470-011	W259	7
—	—	1	1	2014137-011	W226	6
1	1	1	1	2014484-011	W232	5
1	1	1	1	2014462-031	W239	4
1	1	1	1	2014462-021	W238	3
1	1	1	1	2014462-011	W237	2
1	1	1	1	2014463-011	CABLE ASSY W236	1

LIST OF MATERIALS

2014255 J

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX ±, DECIMALS .XXX ±, ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

FINAL	1900030
NEXT ASSY	USED ON
APPLICATION	

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 2/24/66
CHECKED [illegible] DATE 2/24/66
APPROVAL [illegible]
APPROVAL [illegible] DATE 2/24/66
APPROVAL [illegible] DATE 2/24/66
NASA APPROVAL J. C. METZGER
MIT APPROVAL [illegible] DATE 2/24/66
MIT APPROVAL [illegible] DATE 2/24/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

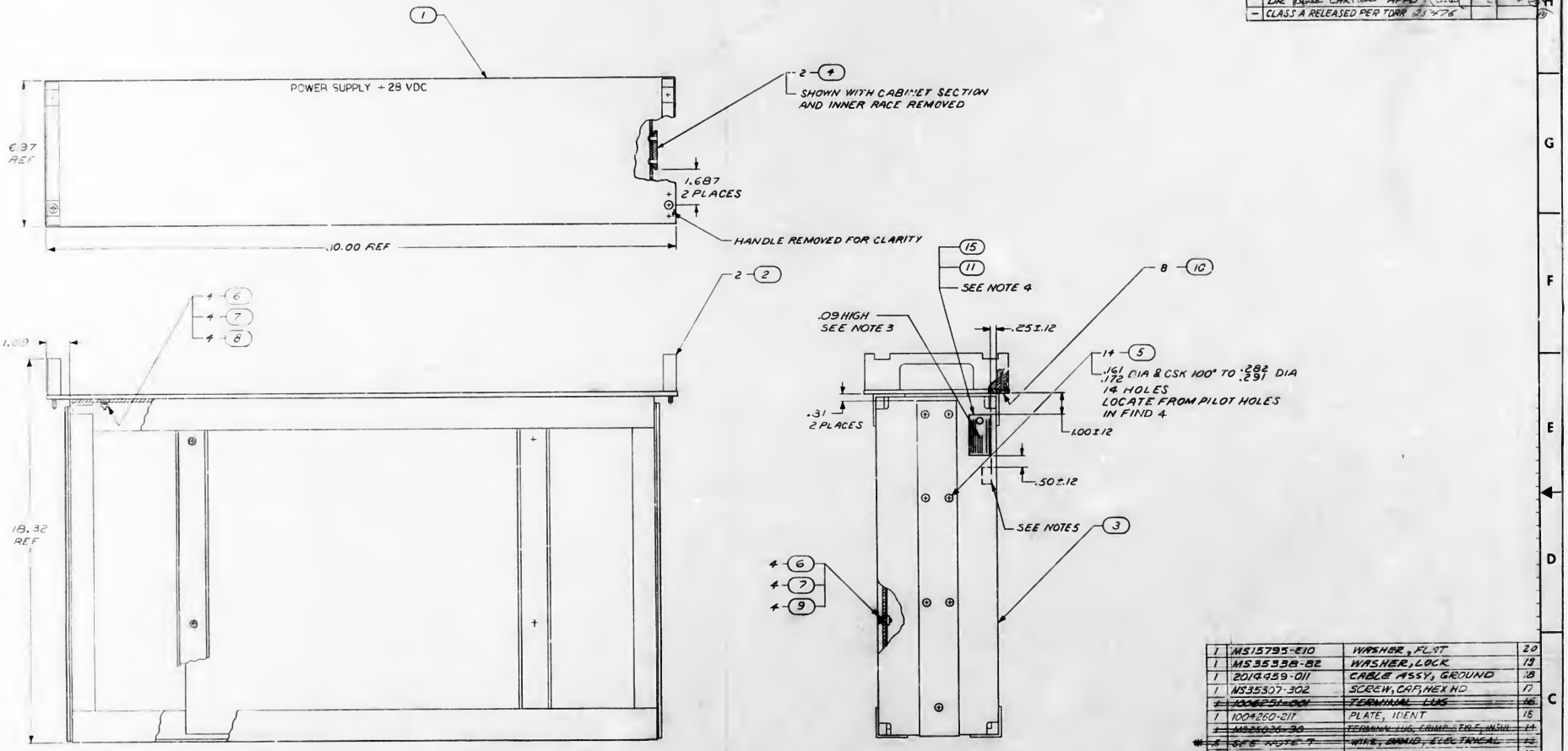
AGC/GSE INTERCONNECTION SET G & N TEST

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	2014255
SCALE NONE	WT	SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014279

SYM	REVISIONS DESCRIPTION	DATE	APPROVED
J	RELEASED PER CCA R25066	11/4/65	
1	CHANGED PER CCA R25181 DR JJB CHK APPD	6 Oct 65	
2	CHANGED PER CCA R25336 DR CHK APPD	7 Dec 65	
–	CLASS A RELEASED PER TDRR 23476		



NOTES:
1. ~~ATTACH FIND 14 TO FIND 1.~~
2. ~~SOLDER FIND 13 TO FIND 12 PER ND1002071.~~
3. SERIALIZE PER ND1002023.
4. BOND FIND NO. 15 TO FIND NO. 3 USING FIND NO. 11.
5. MARK APPROX WEIGHT IN _B .25 HIGH NORMAL GOTHIC CHARACTERS PER ND1002019 USING BLACK INK 1006271-10.
6. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY.
7. ~~BAND FOR GAGE .75, SIZE 3/16, AWG 36, FOR FIND NO. 13.~~
8. ~~SOLDER PER ND1002071.~~

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	
1	MS15795-810	WASHER, FLAT	20
1	MS35338-82	WASHER, LOCK	19
1	2014959-011	CABLE ASSY, GROUND	18
1	NS335307-302	SCREW, CAP, HEX HD	17
~~1~~	~~1006251-001~~	~~TERMINAL LUG~~	~~16~~
1	1004260-217	PLATE, IDENT	15
~~1~~	~~MS25036-30~~	~~TERMINAL LUG, CRIMP STYLE, INSUL~~	~~14~~
~~6~~	~~SEE NOTE 7~~	~~WIRE, SHIELD, ELECTRICAL~~	~~13~~
~~1~~	~~1004135-1~~	~~POST, BINDING~~	~~12~~
AR	MIL-A 5092 TYPE II	ADHESIVE	11
8	MS51959-95	SCREW, MACH. FLAT HD	10
4	MS51957-46	SCREW, MACH. PAN HD	9
4	MS35649-84	NUT, PLAIN HEX	8
8	MS35337-80	WASHER, LOCK	7
8	MS15795-807	WASHER, FLAT	6
14	MS20426AD5-10	RIVET, FLAT HD	5
2	1006660	SLIDE, CHASSIS QUICK DISCONNECT	4
1	2014415	CHASSIS, POWER SUPPLY ASSY	3
2	1014215-3	HANDLE, ASSY	2
1	1006897	POWER SUPPLY	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx ±.02, .xxx ±.005; ANGLES ±0°30'
DO NOT SCALE DRAWING
MATERIAL

2014024
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-847
DRAWN [illegible] DATE MAY 65
CHECKED D. Hurd 16 JUNE 65
APPROVAL [illegible] 30 JUNE 65
APPROVAL [illegible] 7 JULY 65
APPROVAL [illegible] 9 JULY 65
NASA APPROVAL A. C. MITCHELL
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY ASSY
OPERATION CONSOLE

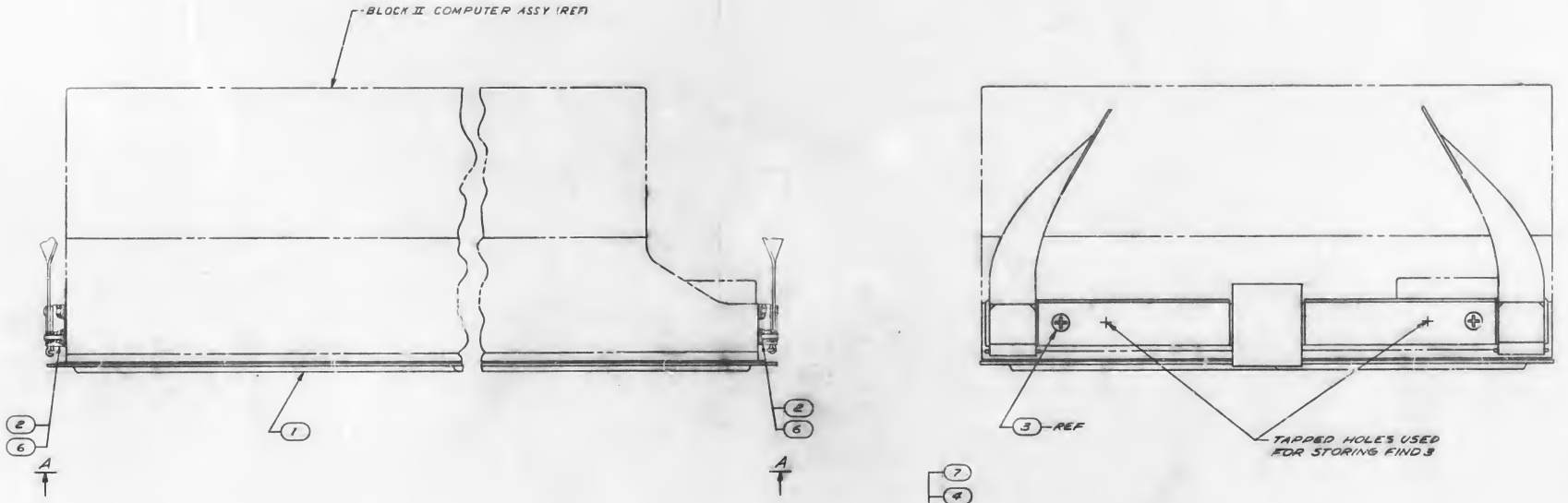
CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014279
SCALE 1/2 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014279

2014282 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER ECR A25YP0		
–	CLASS A RELEASED PER TDRR 24814		
A	CHANGED PER TDRR 25617 DR Fan CHK APPD		
B	CHANGED PER TDRR 30686 DR CHK APPD		
C	CHANGED PER TDRR 31133 DR CHK APPD		



PARTIAL VIEW A-A
SCALE 1/2

NOTES
1. SERIALIZE PER ND1002023
2. AR DENOTES AS REQUIRED

FIND NO.	QTY REQD	QTY PER ASSY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
7	–	1	1004260-255	NAMEPLATE
6	–	1	2016367	HANDLE ASSY
5	AR	AR	MIL-A-5092 TYPE II	ADHESIVE
4	–	1	1004260-205	NAME PLATE
3	4	4	2016352	SCREW, FLAT HD CROSS RECESSED
2	–	2	2014303	HANDLE, ASSY
1	1	1	2014304	PLATE, PROTECTIVE ASSY

-GEN-011 LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX ±, .XXX ±, ANGLES °
DO NOT SCALE DRAWING
MATERIAL

FINAL 1900030
NEXT ASSY USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-4017
DRAWN DATE 29 OCT 68
CHECKED DATE 29 OCT 68
APPROVAL DATE 29 OCT 68
APPROVAL DATE 29 OCT 68
APPROVAL DATE 29 OCT 68
NASA APPROVAL for MITMan
MIT APPROVAL DATE 11/4/68
MIT APPROVAL DATE 11/4/68

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGC HANDLING FIXTURE ASSEMBLY

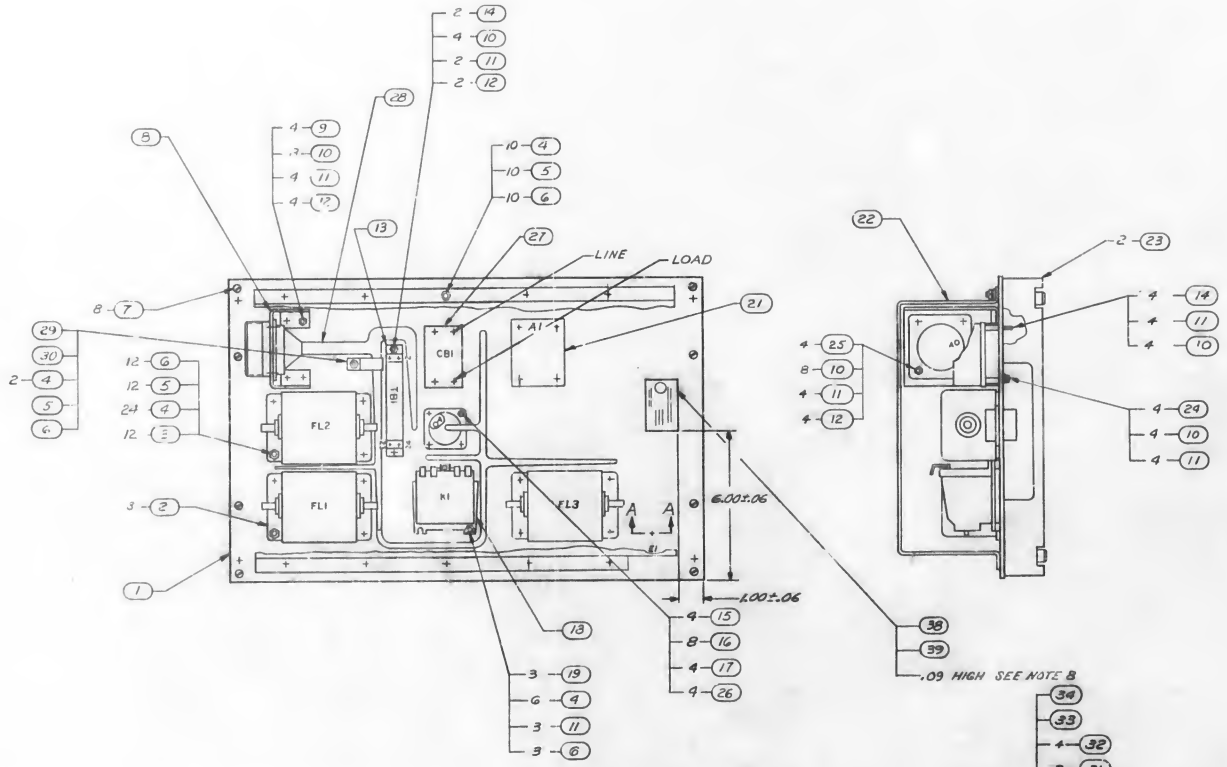
CAGE IDENT NO. 49956 SIZE F NASA DRAWING NO. 2014282
SCALE 1/1 WT SHEET 1 OF 1

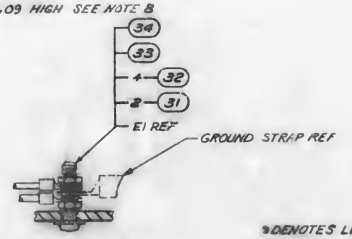
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014282 C

2014302 G

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
F	CLASS A RELEASED PER TDRR 27699		
G	CHANGED PER TDRR 28969 DRAWN CHK'D APPR'D		





SECTION A-A
SCALE 1/1

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. FABRICATE PER ND1002032
3. SOLDER PER ND1002071
4. CRIMP PER ND1002206
5. STRIP .16 ~~AND TIN PER ND1002071~~
6. ATTACH 1 OF FIND NO. 35 TO EACH END OF LEAD ~~EXCEPT ONE END OF B9~~
7. AR DENOTES AS REQUIRED
8. SERIALIZE PER ND1002023
9. QQ-W-343, TYPE 5 AWG 16 SOFT COATED 8 FOR FIND NO 36 ~~TO BE ON END 36 ACC AMP PN X TO PART NO AS SHOWN PER ND1002018 USING WIRE LINE ND1002171~~

JUMPER CHART

COND IDENT	FROM	TO	FIND NO.	AWG
B1	TB1-1	TB1-3	37	16
B2	TB1-5	TB1-7	"	16
B3	TB1-9	TB1-11	"	"
B4	TB1-11	TB1-13	"	"
B5	TB1-13	TB1-15	"	"
B6	TB1-17	TB1-19	"	"
B7	TB1-19	TB1-21	"	"
B8	TB1-21	TB1-23	37	16
~~B9~~	~~TB1-17~~	~~B7~~	~~37~~	~~16~~

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	2014192	SCHEMATIC	REF
	~~MS25036-84~~	~~TERMINAL, LUG~~	40
AR	MIL-A-5092 TYPE II	CEMENT	39
1	1004260-247	NAMEPLATE	38
1.5	MIL-W-16878/4 E16	WIRE, ELEC BLK	37
~~.5~~	~~SEE NOTE 9~~	~~WIRE, ELEC~~	~~36~~
16	MS17143-20	LUG, TERMINAL	35
1	MS51957-84	SCREW, PAN HD	34
1	MS15795-810	WASHER, FLAT	33
4	MS35335-61	WASHER, EXTERNAL LOCK	32
2	MS35690-410	NUT, HEX	31
1	MS51957-46	SCREW, PAN HD	30
1	MS25281-6	CLAMP, CABLE	29
1	2014198-011	WIRING HARNESS	28
1	1006957-17	CIRCUIT BREAKER ASSY	27
4	MS35649-84	NUT, HEX	26
4	MS51957-30	SCREW, PAN HD	25
4	MS51957-28	SCREW, PAN HD	24
2	1014215-6	HANDLE ASSY	23
1	2016364	COVER	22
1	2014390	COMPONENT BD ASSY	21
~~1~~	~~2014300~~	~~INSULATOR~~	~~20~~
5	MS51957-47	SCREW, PAN HD	19
1	1006966	RELAY, ARMATURE	18
4	MS35338-78	WASHER, LOCK	17
8	MS15795-803	WASHER, FLAT	16
4	MS51957-17	SCREW, PAN HD	15
6	MS51957-32	SCREW, PAN HD	14
1	MIL-T-16784/2 6TB12	TERMINAL BD	13
10	MS35649-64	NUT, HEX	12
21	MS35338-79	WASHER, LOCK	11
28	MS15795-805	WASHER, FLAT	10
4	MS51957-31	SCREW, PAN HD	9
1	1014918	BRACKET, CONN	8
8	MS51959-44	SCREW, FLAT HD	7
26	MS35649-84	NUT, HEX	6
23	MS35338-80	WASHER, LOCK	5
42	MS15795-807	WASHER, FLAT	4
12	MS51957-45	SCREW, PAN HD	3
3	1006654	FILTER, RADIO INTERFERENCE	2
1	2014301	PANEL, FRONT	1
-011		LIST OF MATERIALS	

*DENOTES LENGTH IN FEET

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ±.03 .xxx ±
ANGLES °
DO NOT SCALE DRAWING
MATERIAL

2014029 NEXT ASSY | USED ON APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

RAYTHEON CO. LEXINGTON, MASS.
COMPACT NO. NAS 9-497
DRAWN B.K.F. DATE 4 MAY 66
CHECKED W. [illegible] 4 MAY 66
APPROVAL P.E. Cook 4 MAY 66
APPROVAL [illegible] 4 MAY 66
APPROVAL [illegible] 4 MAY 66
NASA APPROVAL A.C. METCALF
MIT APPROVAL [illegible] 4 May 66
MIT APPROVAL [illegible] 4 May 66

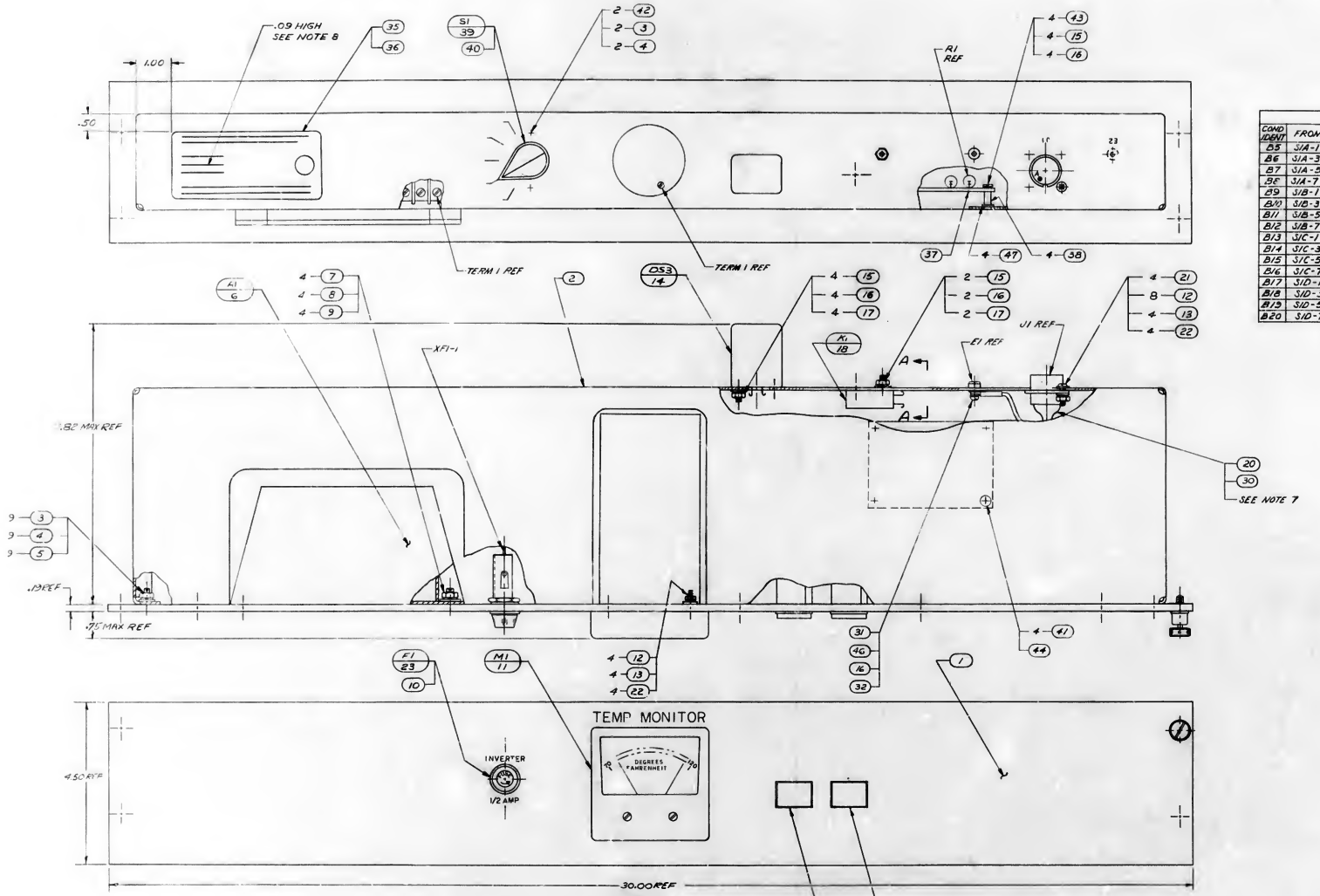
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AC INPUT PANEL ASSEMBLY
OPERATION CONSOLE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	F	2014302

SCALE 1/2 WT SHEET 1 OF 1

2014302 G



REVISIONS			
ST#	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25496		
1	CHANGE PER CCA R25317 DR W. Kelly CHK [illegible] APPD		
–	CLASS B CHANGED PER CCA R25509		
A	CHANGED PER CCA R25560 DR [illegible] CHK [illegible] APPD		
B	CHANGED PER CCA R25756 CLASS A RELEASED PER TCRR R25976		
C	CHANGED PER TCRR 26465 DR Q.S. Brown CHK [illegible] APPD		
D	CHANGED PER TCRR 26462 DR Q.S. Brown CHK [illegible] APPD		

JUMPER CHART (CONT.)

COND IDENT	FROM	TO	FIND NO.	AWG	LENGTH	REMARKS
B5	SJA-1	SJA-2	45	22	1.00	
B6	SJA-3	SJA-4	45	22	1.00	
B7	SJA-5	SJA-6	45	22	1.00	
B8	SJA-7	SJA-8	45	22	1.00	
B9	SJB-1	SJB-2	45	22	1.00	
B10	SJB-3	SJB-4	45	22	1.00	
B11	SJB-5	SJB-6	45	22	1.00	
B12	SJB-7	SJB-8	45	22	1.00	
B13	SJC-1	SJC-2	45	22	1.00	
B14	SJC-3	SJC-4	45	22	1.00	
B15	SJC-5	SJC-6	45	22	1.00	
B16	SJC-7	SJC-8	45	22	1.00	
B17	SJD-1	SJD-2	45	22	1.00	
B18	SJD-3	SJD-4	45	22	1.00	
B19	SJD-5	SJD-6	45	22	1.00	
B20	SJD-7	SJD-8	45	22	1.00	

	2014152	SCHEMATIC, ELECTRICAL	REF
4	MS15795-808	WASHER, FLAT	47
1	MS15795-805	WASHER, FLAT	46
* AR	SEE NOTE 3	WIRE, BUS	45
AR	MIL-S-22473, GR NV	SEALING AND RETAINING COMPOUND	44
4	MS51957-27	SCREW, PAN HD	43
2	MS51957-43	SCREW, PAN HD	42
4	MS51959-27	SCREW, FLAT CSK HEAD	41
1	MS91528-2K2B	KNOB, POINTER	40
1	1006257-004	SWITCH, ROTARY	39
4	1006480-005	POST, ELECTRICAL	38
1	2016339-011	COMPONENT BD ASSY A2	37
AR	MIL-A-5092 TYPE II	ADHESIVE	36
1	1004260-249	PLATE, IDENT	35
6	MS25036-1	TERMINAL LUG	34
* 1.0	MIL-W-16878/4 E22	WIRE, ELECTRICAL WHITE	33
1	MS51957-89	SCREW, PAN HD, CROSS RECESSED	32
1	MS35333-71	WASHER, LOCK INT TOOTH	31
AR	1006458-004	TAPE, LACING	30
4	1006507-006	LAMP, INCANDESCENT	29
1	1006404-038	FRONT LENS	28
1	1006404-036	FRONT LENS	27
2	1006404-004	DISPLAY SCREEN, FULL	26
2	1006404-002	COLOR FILTER, WHITE	25
2	1006404-001	LIGHT INDICATOR, BASIC UNIT	24
1	F02AC50V1/2A	FUSE (MIL-F-5160/02)	23
8	MS35649-44	NUT, PLAIN, HEX	22
4	MS51957-15	SCREW, PAN HD, CROSS-RECESSED	21
1	2014991-011	HARNESS	20
1	1006751-000	SEMICOND DEVICE, DIODE	19
1	1006492-001	RELAY COIL	18
6	MS35649-64	NUT, PLAIN, HEX	17
11	MS35338-79	WASHER, LOCK	16
10	MS15795-806	WASHER, FLAT	15
1	1006485	FLASHER	14
8	MS35338-78	WASHER, LOCK	13
12	MS15795-804	WASHER, FLAT	12
1	1006469-001	INDICATOR, TEMP CONTROL	11
1	MS3057Z-1	FUSEHOLDER	10
4	MS35649-104	NUT, PLAIN, HEX	9
4	MS35338-81	WASHER, LOCK	8
4	MS15795-809	WASHER, FLAT	7
1	1006469-003	CONTROL MODULE	6
9	MS35649-84	NUT, PLAIN, HEX	5
11	MS35338-80	WASHER, LOCK	4
11	MS15795-807	WASHER, FLAT	3
1	2014312	CHASSIS	2
1	2014311	PANEL	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

REFERENCE DESIGNATIONS	
SYMBOL	FIND NO.
CR1	19

JUMPER CHART

COND IDENT	FROM	TO	FIND NO.	AWG	LENGTH	REMARKS
B1	A1-6	A1-7	33	22	3.00	SEE NOTE 3
B2	M1-8	M1-12	33	22	3.00	SEE NOTE 4
B3	DS1-A	DS1-B	33	22	3.00	SEE NOTE 4
B4	DS2-A	DS2-B	33	22	3.00	SEE NOTE 4

NOTES
1. FOR FABRICATION SEE ND1002032
2. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
3. STRIP FIND NO 33 .120 BOTH ENDS & TIN PER ND1002071
4. STRIP FIND NO.33 .187±.03 BOTH ENDS DO NOT TIN. ATTACH FIND NO.34. CRIMP PER ND1002206
5. MARK CONDUCTOR IDENTIFICATION PER ND1002013
6. SOLDER PER ND1002071
7. SPOT TIE HARNESS TO RETAINING STRAPS USING FIND NO.30, 5 PLACES
8. SERIALIZE PER ND1002023
9. 22AWG-343, TYPE 3, SOFT COATED (a) AWG SIZE 22

* DENOTES LENGTH IN FEET

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .xx ±.06, .xxx ±.010, ANGLES ±1°
DO NOT SCALE DRAWING
MATERIAL

2014024 NEXT ASSY | USED ON APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-457
DRAWN [illegible] DATE 7/14/65
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL 7/14 [illegible]
NASA APPROVAL A.E. Nicholas
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

TEMP MONITOR ASSY
OPERATION CONSOLE

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014313
SCALE 1/1 | WT. | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014313 D

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25076		
1	CHANGED PER CCA R25485		
--	CLASS B CHANGED PER CCA R25502		
A	CHANGED PER CCA R25621		
B	CHANGED PER CCAR25711 AND CLASS A RELEASED PER TDRR 25472		
C	CHANGED PER TDRR 28097		

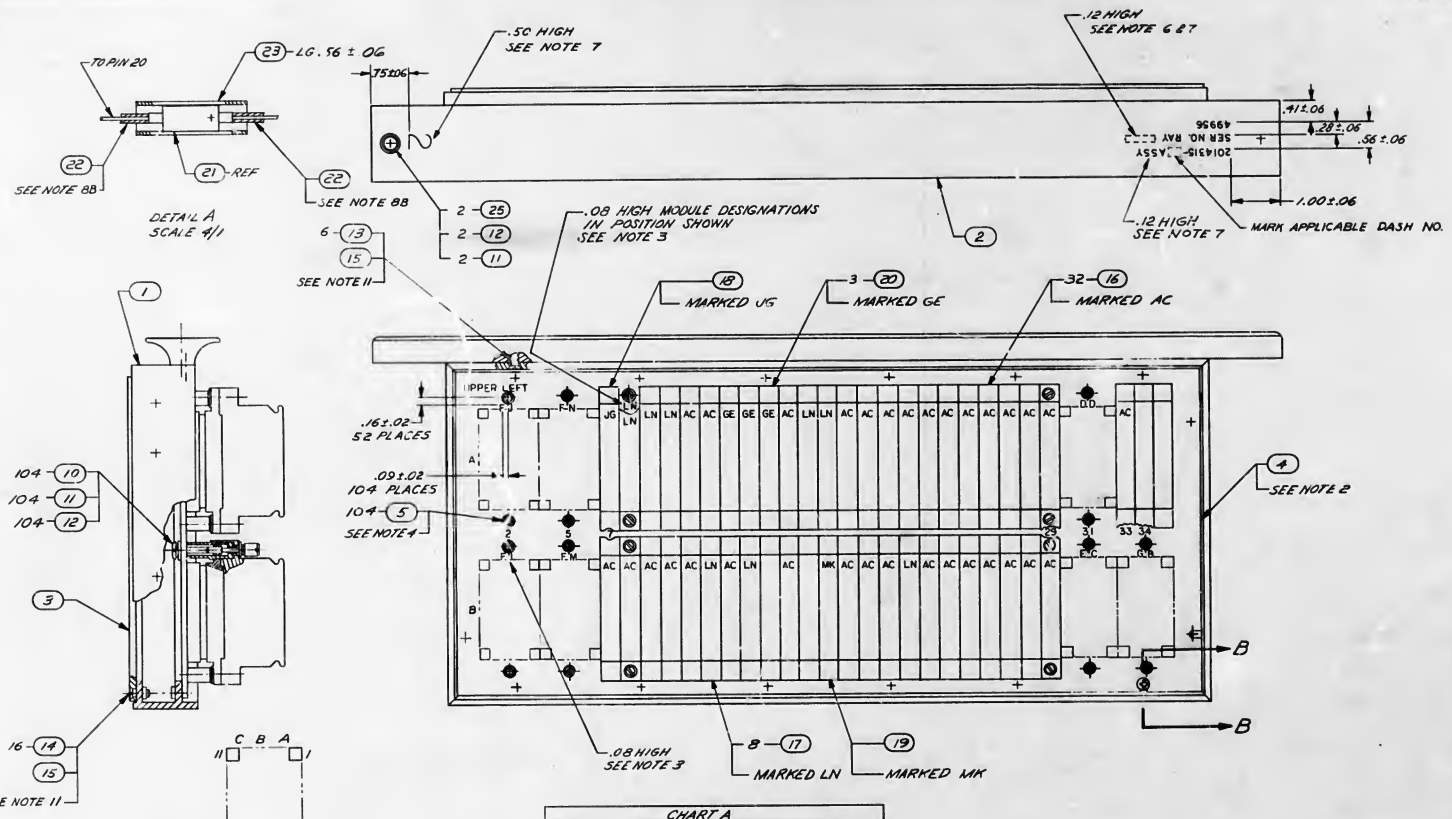
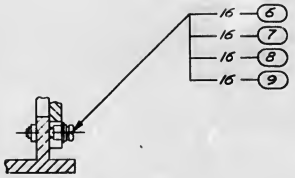


CHART A				
REF DES	FIND NO.	FROM	TO	REMARKS
C1	21	B07-02	B07-20	
C2	21	B07-03	B08-20	
C3	21	B07-06	B06-20	
C4	21	B12-13	B12-20	
C5	21	B14-08	B15-20	
C6	21	A19-06	A20-20	
C7	21	B34-04	B35-20	
C8	21	A18-03	A19-20	
C9	21	A06-04	A06-20	FOR-021



QTY REQD 021	QTY REQD -011	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			LIST OF MATERIALS	
-	-	2016389	LOGIC DIAGRAM	REF
-	-	2016376	WIREWRAP MACH CARD	REF
-	-	2014144	LOGIC DIAGRAM	REF
-	-	2014098	WIREWRAP MACH. CARD	REF
2	2	1006998-1	SCREW, CAPTIVE	25
AR	AR	1006945-1	WIRE, ELECTRICAL	24
1.0	1.0	SEE NOTE 10	SLEEVING	23
AR	AR	1006776-197	SLEEVING, INSULATION	22
9	8	CS13AF010K	CAPACITOR, .1uf 35V	21
3	3	1014230	MODULE, INTERFACE RECEIVER	20
1	1	1014096	MODULE, DRIVER	19
1	1	1014065-3	MODULE, RESISTOR 510 Ω	18
8	8	2014000-011	MODULE, BUFFERED FLIP-FLOP	17
32	32	1014034	MODULE, NOR	16
AR	AR	MIL-S-22473, GR-MV	SEALING & RETAINING COMPOUND	15
16	16	MS51959-15	SCREW, FLAT HD	14
6	6	MS51957-27	SCREW, FLAT HD	13
106	106	MS35338-79	WASHER, LOCK	12
106	106	1006997	WASHER, FLAT	11
104	104	MS51957-29	SCREW, PAN HD	10
16	16	1006986	WASHER, SHOULDERED, NYLON	9
16	16	MS35338-78	WASHER, LOCK	8
16	16	MS15795-803	WASHER, FLAT	7
16	16	MS51957-17	SCREW, PAN HD	6
104	104	1014212	STAND-OFF, PROGRAM	5
1	1	1006495-001	PLATE ASSY	4
1	1	1014026	COVER, CONN PLATE	3
1	1	1014258	SUPPORT, FRAME	2
1	1	1014014-2	FRAME	1

* DENOTES LENGTH IN FEET

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO. 4 USING FIND NO. 21 PER 2014098 OR 2016376 & ND1002031
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047
5. AR DENOTES AS REQUIRED
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
8. AFTER MACHINE WIREWRAPPING PLATE, INSTALL FIND NO. 21 PER CHART A & DETAIL A
   8A. SOLDER PER ND1002071
   8B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY PIN LOCATION AT ASSY
9. ~~MIL-I-631 TYPE F FORM U2 GRADE 2 CLASS I CATEGORY I COLOR BLUE AWG SIZE NO. 24 FOR FIND NO. 22~~
10. MIL-I-631 TYPE F FORM U2 GRADE 2 CLASS I CATEGORY I COLOR CLEAR AWG SIZE NO. 8 FOR FIND NO. 23
11. ASSEMBLE FIND NO. 13 & FIND NO. 14 USING FIND NO. 15

2014041		
NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ± .01 .XXX ± .005 ANGLES ± 0°
DO NOT SCALE DRAWING
MATERIAL

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-4327
DRAWN J. Roper DATE 6-June-65
CHECKED
APPROVED
APPROVAL
APPROVED
NASA APPROVAL
NAT APPROVAL
NAT APPROVAL

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

LOGIC PLATE ASSY NO. 2
PROGRAMMER & MONITOR
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014315

SCALE 1/1 | WT | SHEET 1 OF 1

2014336

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
O	RELEASED PER CCA 25076	7/1/65	J.F.K.
I	CHANGED PER CCA R25485 DR R. Trisler CHK Wilson APPD C. Pate	11/1/65	J.F.K.
--	CLASS B CHANGED PER CCA R25502	11/1/65	J.F.K.
A	CHANGED PER CCA R25621 DR Hampton CHK Jones APPD R.C.D	1/1/66	J.F.K.
B	CHANGED PER CCA R25711 DR Young CHK KRA APPD R.C.	2/1/66	J.F.K.
C	CHANGED PER CCA R25887 AND CCLASS A RELEASED PER TDRR 26218	3/1/66	J.F.K.
D	CHANGED PER TDRR 28097 DR R.S. CHK APPD J. Cooley	5/1/66	J.F.K.
E	CHANGED PER TDRR 29321 DR Simon CHK R.C.D APPD R.C.D	6/1/66	J.F.K.
F	CHANGED PER TDRR 30172 DR J. Hatcher CHK C.D. Young APPD J.F.K.	7/1/66	J.F.K.
G	CHANGED PER TDRR 33949 DR W. Ewing CHK W. Ewing APPD J.F.K.	9/1/66	J.F.K.
H	CHANGED PER TDRR 35539 DR J. Barnes CHK T. Nelson APPD T.S.K.	11/1/66	T.S.K.

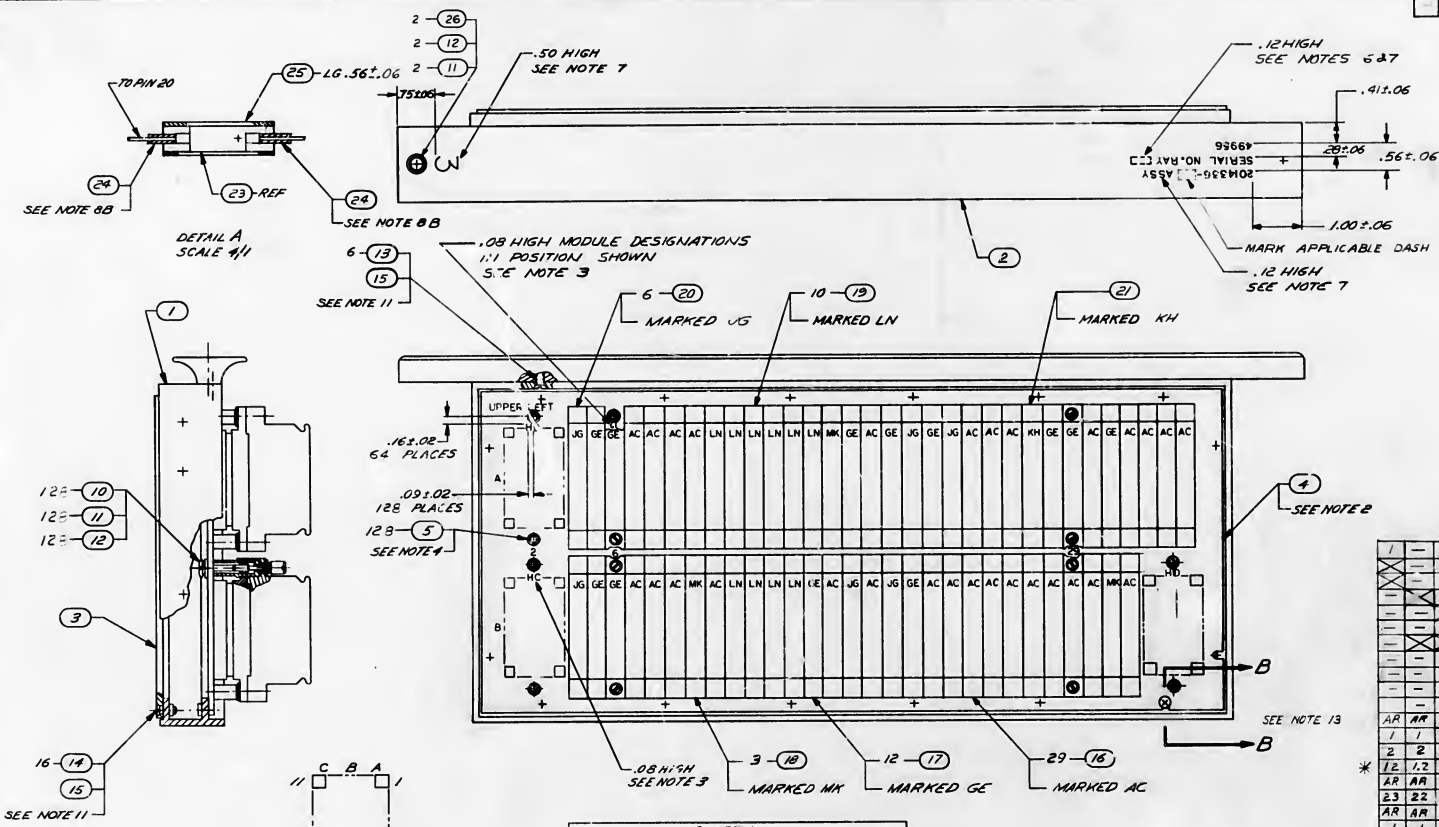


CHART A				
REF DES	FIND NO.	FROM	TO	REMARKS
C1	23	A34-02	A34-20	
C2		A34-13	A33-20	
C3		A32-13	A32-20	
C4		A34-15	A35-20	
C5		B35-01	B35-20	
C6		A09-15	A08-20	
C7		A19-06	A20-20	
C8		A07-05	A06-20	
C9		A07-02	A07-20	
C10		A01-13	A01-20	
C11		B11-06	B12-20	
C12		B34-08	B35-20	
C13		SEE NOTE 12	B22-20	
C14		B25-03	B24-20	
C15		B32-12	B32-20	
C16		B13-03	B13-20	
C17		A30-03	A30-20	
C18		A30-05	A31-20	
C19	23	B25-02	B25-20	
C20	27	B27-19	B23-20	SEE NOTE 13
C21	23	A17-13	A17-20	
C22	23	B34-10	B31-20	
C23	23	A17-1	A18-20	
C24	29	A05-02	A05-20	FOR -061
C25	23	B34-13	B34-20	FOR -061

NOTE
13 SLEEVE LEADS OF FIND NO. 27, USING FIND NO. 28

QTY REQD	QTY REQD	QTY REQD	QTY REQD	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
-061	-051	-041	-031	-011		LIST OF MATERIALS	
1	—	—	—	—	CY15C471J	CAPACITOR,470 pf, 500V	29
—	—	—	—	—	2016474	LOGIC DIAGRAM	REF
—	—	—	—	—	2016476	WIREWRAP MACH CARD	REF
—	—	—	—	—	2016462	LOGIC DIAGRAM	REF
—	—	—	—	—	2016452	LOGIC DIAGRAM	REF
—	—	—	—	—	2016438	LOGIC DIAGRAM	REF
—	—	—	—	—	2016439	WIREWRAP MACH CARD	REF
—	—	—	—	—	2016390	LOGIC DIAGRAM	REF
—	—	—	—	—	2016377	WIREWRAP MACH CARD	REF
—	—	—	—	—	2014195	LOGIC DIAGRAM	REF
—	—	—	—	—	2014099	WIREWRAP MACH. CARD	REF
AR	AR	AR	—	—	1006776-195	SLEEVING, INSULATION	9
1	1	1	—	—	CYFM20C472J	CAPACITOR, 4700 PF 300V	27
2	2	2	2	2	1006998-1	SCREW, CAPTIVE	26
12	12	.9	.9	.9	SEE NOTE 10	SLEEVING	25
AR	AR	AR	AR	AR	1006776-197	SLEEVING, INSULATION	24
23	22	19	19	19	CS13AF010K	CAPACITOR, 104, 35V	23
AR	AR	AR	AR	AR	1006945-1	WIRE, ELEC, INSUL MICW AWG SOLID	22
1	1	1	1	1	1014079	MODULE, GATED FLIP-FLOP	21
6	6	6	6	6	1014065-3	MODULE, RESISTOR 5/10 a.	20
10	10	10	10	10	2014000-011	MODULE, BUFFERED FLIP-FLOP	19
3	3	3	3	3	1014095	MODULE, DRIVER	18
12	12	12	12	12	1014230	MODULE, INTERFACE RECEIVER	17
29	29	29	29	29	1014034	MODULE, MXR	16
AR	AR	AR	AR	AR	MIL-S-22473, GR-HV	SEALING & RETAINING COMPOUND	15
16	16	16	16	16	MS51959-15	SCREW, FLAT HD	14
6	6	6	6	6	MS51959-27	SCREW, FLAT HD	13
130	130	130	130	130	MS35338-79	WASHER, LOCK	12
130	130	130	130	130	1006997	WASHER, FLAT	11
128	128	128	128	128	MS51957-29	SCREW, PAN HD	10
16	16	16	16	16	1006986	WASHER, SHOULDER SD, NYLON	9
16	16	16	16	16	MS35338-78	WASHER, LOCK	8
16	16	16	16	16	MS15795-803	WASHER, FLAT	7
16	16	16	16	16	MS51957-17	SCREW, PAN HD	6
128	128	128	128	128	1014212	STAND-OFF, PROGRAM	5
1	1	1	1	1	1006495-001	PLATE ASSY	4
1	1	1	1	1	1014026	COVER, CONN PLATE	3
1	1	1	1	1	1014258	SUPPORT, FRAME	2
1	1	1	1	1	1014014-2	FRAME	1

* DENOTES LENGTH IN FEET

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO.4 USING FIND NO.22 PER 2014099 OR 2016377 OR 2016439 OR 2016476 AND ND1002031
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002013 USING BLACK INK 1006271-10
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047
5. AR DENOTES AS REQUIRED
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002013 USING WHITE INK 1006271-1
8. AFTER MACHINE WIREWRAPPING PLATE, INSTALL FIND NO.23 PER CHART A & DETAIL A
   8A. SOLDER PER ND1002071
   8B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY PIN LOCATION AT ASSY
~~9. MIL-I-631 TYPE F FORM U-O GRADE A CLASS I CATEGORY I COLOR BLACK AWG SIZE NO. 8 FOR FIND NO. 26~~
10. MIL-I-631 TYPE F FORM U-O GRADE A CLASS I CATEGORY I COLOR CLEAR AWG SIZE NO. 8 FOR FIND NO. 25
11. ASSEMBLE FIND NO.13 & FIND NO.14 USING FIND NO.15
12. FOR -011 & -021 CONFIGURATION, CAPACITOR LEAD ATTACHED TO B23-17 & FOR -031, -041, -051 & -061 CONFIGURATION, CAPACITOR LEAD ATTACHED TO B23-05

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014041	NEXT ASSY	USED ON
	APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx ±, .xxx ±, ANGLES °
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-447
DRAWN [illegible] DATE 7/1/65
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

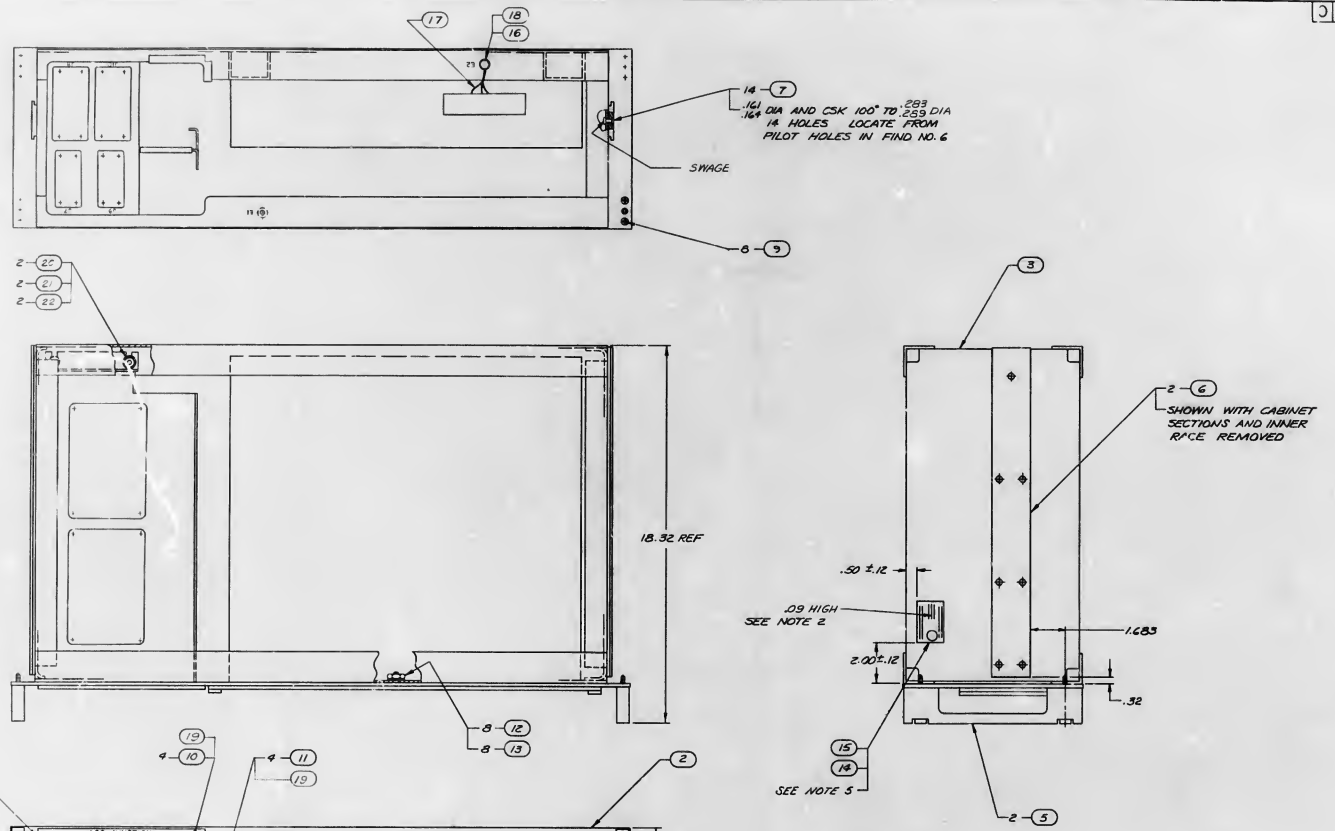
LOGIC PLATE ASSY NO. 3
PROGRAMMER & MONITOR
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	F	2014336

SCALE 1/1 WT SHEET 1 OF 1

2014341 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
Q	RELEASED PER [illegible]	[illegible]	[illegible]
I	CHANGED PER CCA # 25889 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
-	CLASS A RELEASED PER DRR 25472	[illegible]	[illegible]
A	CHANGED PER TDRR 26285 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
B	CHANGED PER TDRR 26458 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
C	CHANGED PER TDRR 27452 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]



QTY REQD	P. N. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS21044-C3	NUT, SELF-LOCKING	22
2	MS15795-803	WASHER, FLAT	21
2	MS51960-66	SCREW, FLAT HD	20
AR	MIL-S-22473, GR HV	SEALING & RETAINING COMPOUND	2
1	MS35307-362	SCREW, CAP, HEX HD	18
1	2014459-011	GROUND STRAP	17
1	MS35333-74	WASHER, LOCK	16
1	1004260-248	PLATE, IDENT	15
AR	MIL-A-5092 TYPE II	ADHESIVE	14
8	MS21044-C08	NUT, SELF-LOCKING	13
8	MS15795-807	WASHER, FLAT	12
8	MS51959-65	SCREW, FLAT HD	11
4	MS51959-46	SCREW, FLAT HD	10
8	MS51959-45	SCREW, FLAT HD	9
1	1006932	POWER SUPPLY	8
14	MS20426AD5-9	RIVET, FLAT HD	7
2	1006660	SLIDE, CHASSIS	6
2	1018215-4	HANDLE ASSY	5
2	2014337	SPACER	4
1	2014339	FRAME ASSY	3
1	2014338	FRONT PANEL	2
1	2014380-011	BRACKET, CONNECTOR ASSY	1

LIST OF MATERIALS

NOTES:
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. SERIALIZE PER ND1002023
3. AR DENOTES AS REQUIRED
4. REMOVE BURRS AND SHARP EDGES .005/.020
5. BOND FIND NO. 15 TO FIND NO. 3 USING FIND NO. 14
6. FABRICATE PER ND1002032
7. REMOVE EXISTING JUMPERS FROM TERMINAL BOARD ON FIND NO. 6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .02 .005 ANGLES 1°
DO NOT SCALE DRAWING
MATERIAL
2014024
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-1537
DRAWN [illegible] DATE 7-1-64
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGC JUNCTION ASSY
OPERATION CONSOLE

CODE IDENT NO 49956 | SIZE J | NASA DRAWING NO 2014341
SCALE 1/2 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014341 C

2014352 E

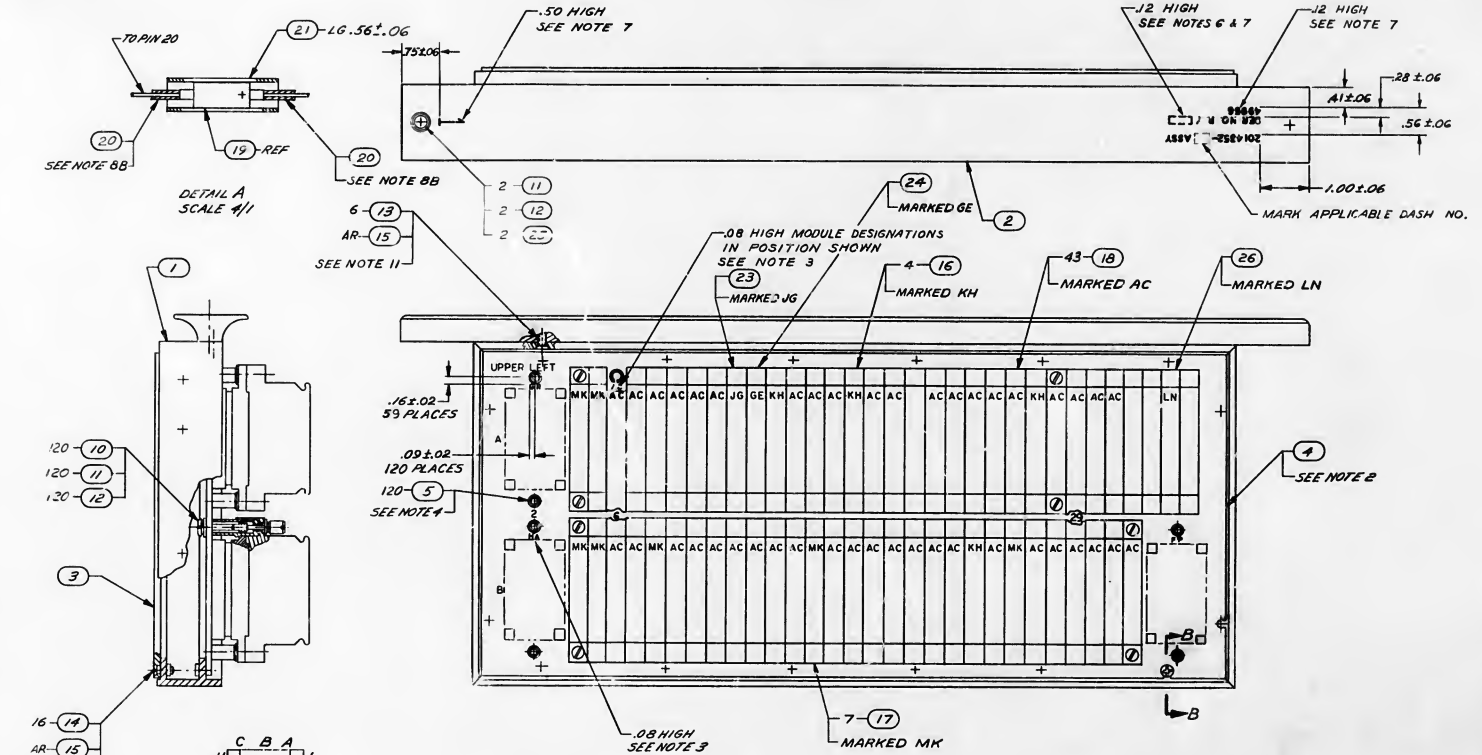


CHART A				
REF DES	FIND NO.	FROM	TO	REMARKS
C1	19	A23-13	A23-20	
C2		B32-02	B32-20	
C3		A15-13	A15-20	
C4		A11-08	A12-20	
C5		B34-08	B33-20	
C6		A11-19	A10-20	
C7		B04-02	B04-20	
C8		B05-02	B05-20	
C9		B08-18	B07-20	
C10		A04-02	A04-20	
C11		A05-02	A05-20	
C12		B24-14	B23-20	
C13		A15-02	A16-20	
C14		A25-02	A25-20	
C15		A19-19	A18-20	
C16		A25-04	A24-20	
C17		B09-05	B10-20	
C18		B35-06	B35-20	
C19		A22-05	A20-20	
C20		A17-04	A17-20	
C21		B27-02	B27-20	
~~C22~~		~~B20-12~~	~~B19-20~~	
C23		B20-16	B21-20	
C24	19	B28-12	B28-20	

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO. 1 USING FIND 2 PER 2014097 OR 2016375 & ND1002031
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047
5. AR DENOTES AS REQUIRED
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
8. AFTER MACHINE WIRE WRAPPING PLATE, INSTALL FIND NO. 19 PER CHART A & DETAIL A
   8A. SOLDER PER ND1002071
   8B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY PIN LOCATION AT ASSY
~~9. MIL-I-631 TYPE F FORM U; GRADE 2 CLASS I CATEGORY I COLOR BLUE AWG SIZE NO. 24 FOR FIND NO 20~~
10. MIL-I-631 TYPE F FORM U; GRADE 2 CLASS I CATEGORY I COLOR CLEAR AWG SIZE NO. 8 FOR FIND NO. 21
11. ASSEMBLE FIND NO. 13 & FIND NO. 14 USING NO. 15

* DENOTES LENGTH IN FEET

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
O	RELEASED PER CCA25076	2/6/63	
I	CHANGED PER CCA R25485 DR CHK APPD	4/15/65	
–	CLASS B CHANGED PER CCAR25502	2/24/66	
A	CHANGED PER CCA R25621 DR CHK APPD	4/1/66	
B	CHANGED PER CCA R25693 DR CHK APPD	4/1/66	
C	CHANGED PER CCA R25711 AND CLASS A RELEASED PER TDRR 25972	4/1/66	
D	CHANGED PER TDRR 27070 DR CHK APPD	4/1/66	
E	CHANGED PER TDRR 28037 DR CHK APPD	8/26/66	

QTY REQD	QTY SHOP	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	–	2016375	WIREWRAP MACH CARD	REF
	–	2016388	LOGIC DIAGRAM	REF
–		2014097	WIREWRAP MACH CARD	REF
–		2014143	LOGIC DIAGRAM	REF
1	1	2014000-011	MODULE, BUFFERED FLIP-FLOP	26
2	2	1006998-1	SCREW, CAPTIVE	25
1	1	1014230	MODULE, INTERFACE RECEIVER	24
1	1	1014065-3	MODULE, RESISTOR	23
AR	AR	1006945-1	WIRE, ELECTRICAL	22
1.2	1.2	SEE NOTE 10	SLEEVING	21
AR	AR	1006776-197	SLEEVING, INSULATION	20
23	23	CS13AF010K	CAPACITOR 1 MF 35 V	19
43	43	1014034	MODULE, NOR	18
7	7	1014096	MODULE, DRIVER	17
4	4	1014079	MODULE, GATED FLIP-FLOP	16
AR	AR	MIL-S-22473 GR NV	SEALING & RETAINING COMPOUND	15
16	16	MS51959-15	SCREW, FLAT HD	14
6	6	MS51959-27	SCREW, FLAT HD	13
122	122	NAS1338-79	WASHER, LOCK	12
122	122	1006997	WASHER, FLAT	11
120	120	MS51957-29	SCREW, PAN HD	10
16	16	1006986	WASHER, SHOULDERED, NYLON	9
16	16	MS35338-711	WASHER, LOCK	8
16	16	MS15795-803	WASHER, FLAT	7
16	16	MS51957-17	SCREW, PAN HD	6
120	120	1014212	STAND-OFF, PROGRAM	5
1	1	1006495-001	WIRE WRAP PLATE	4
1	1	1014026	COVER, CONN PLATE	3
1	1	1014258	SUPPORT, FRAME	2
1	1	1014014-2	FRAME	1

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS .xx ±, .xxx ±, ANGLES ±°. DO NOT SCALE DRAWING. MATERIAL

2014041 | NEXT ASSY | USED ON | APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS9-417
DRAWN
CHECKED
APPROVAL QUALITY
APPROVAL PROJECT ENGR
APPROVAL MFG
NASA APPROVAL
INT APPROVAL
INT APPROVAL

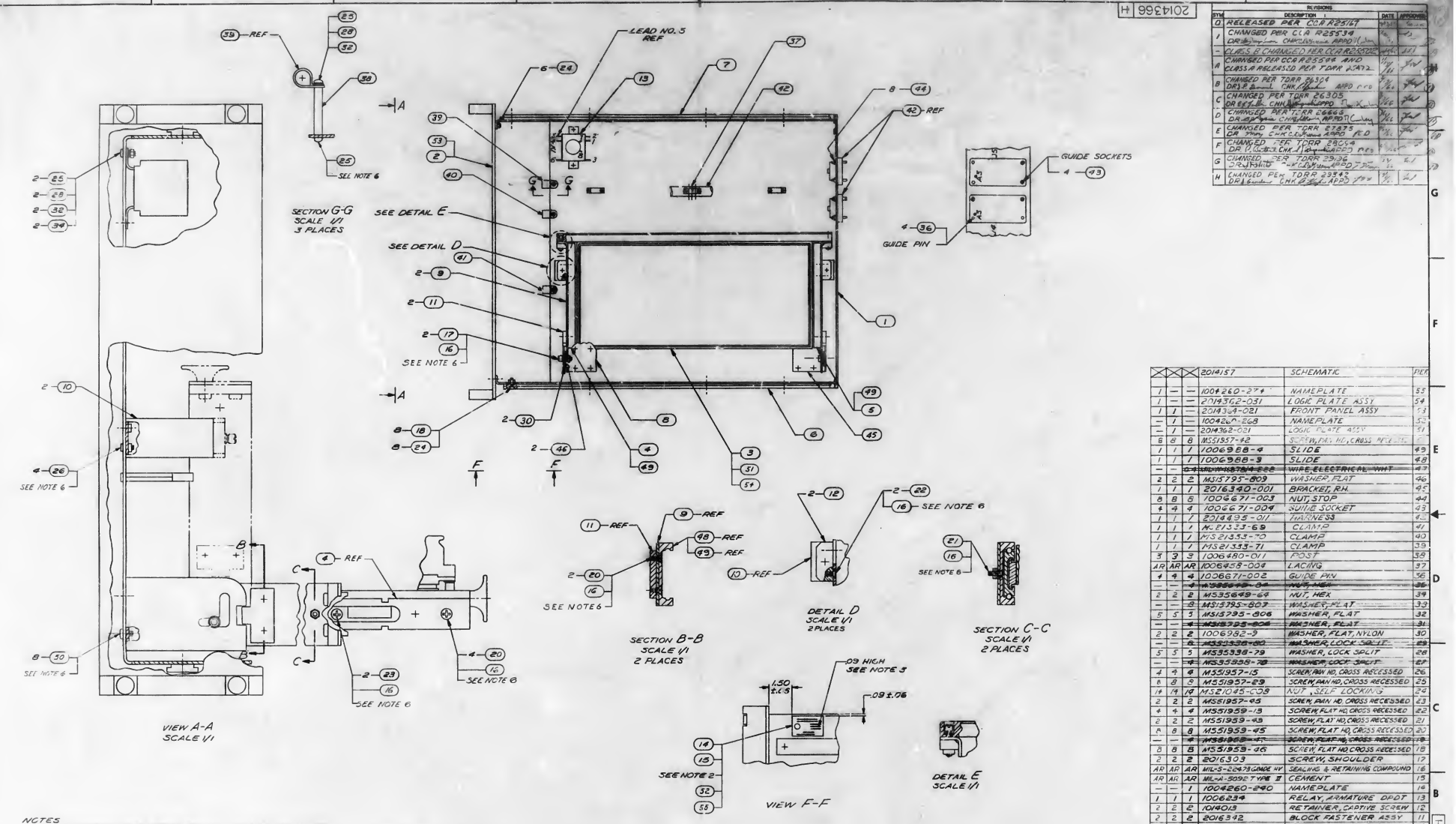
MANNED SPACECRAFT CENTER HOUSTON, TEXAS

LOGIC PLATE ASSY NO. 1
PROGRAMMER & MONITOR
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014352
SCALE 1/1 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014352 F



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
Q	RELEASED PER CCA R25167		
J	CHANGED PER CCA R25534 DR CHK APPD		
-	CLASS B CHANGED PER CCA R25572		
A	CHANGED PER CCA R25568 AND CLASS A RELEASED PER TDRR 27472		
B	CHANGED PER TDRR 28324 DR CHK APPD		
C	CHANGED PER TDRR 28305 DR CHK APPD		
D	CHANGED PER TDRR 28668 DR CHK APPD		
E	CHANGED PER TDRR 27875 DR CHK APPD		
F	CHANGED PER TDRR 28054 DR CHK APPD		
G	CHANGED PER TDRR 29326 DR CHK APPD		
H	CHANGED PER TDRR 29542 DR CHK APPD		

QTY REQD -001	QTY REQD -002	QTY REQD -011	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
			2014157	SCHEMATIC	PER
1	—	—	100+260-274	NAMEPLATE	55
1	—	—	2014362-031	LOGIC PLATE ASSY	54
1	1	—	2014364-021	FRONT PANEL ASSY	53
—	1	—	100+260-268	NAMEPLATE	52
—	1	—	2014362-031	LOGIC PLATE ASSY	51
6	6	6	MS51957-42	SCREW, PAN HD, CROSS RECESSED	50
1	1	1	1006988-4	SLIDE	49
1	1	1	1006988-3	SLIDE	48
—	—	~~2~~	~~MS18784-822~~	~~WIRE, ELECTRICAL, WHT~~	47
2	2	2	MS15795-809	WASHER, FLAT	46
1	1	1	2016340-001	BRACKET, R.H.	45
8	8	8	100667-003	NUT, STOP	44
4	4	4	100667-004	SWIVEL SOCKET	43
1	1	1	2014493-011	HARNESS	42
1	1	1	MS21333-68	CLAMP	41
1	1	1	MS21333-70	CLAMP	40
1	1	1	MS21333-71	CLAMP	39
3	3	3	1006480-011	POST	38
AR	AR	AR	1006458-004	LACING	37
4	4	4	100667-002	GUIDE PIN	36
—	—	~~4~~	~~MS35649-84~~	~~NUT, HEX~~	35
2	2	2	MS35649-64	NUT, HEX	34
—	—	~~8~~	~~MS15795-807~~	~~WASHER, FLAT~~	33
5	5	5	MS15795-806	WASHER, FLAT	32
—	—	~~4~~	~~MS35335-806~~	~~WASHER, FLAT~~	31
2	2	2	1006982-9	WASHER, FLAT, NYLON	30
—	—	~~8~~	~~MS35338-80~~	~~WASHER, LOCK SPLIT~~	29
5	5	5	MS35338-79	WASHER, LOCK SPLIT	28
—	—	~~4~~	~~MS35335-78~~	~~WASHER, LOCK SPLIT~~	27
4	4	4	MS51957-15	SCREW, PAN HD, CROSS RECESSED	26
8	8	8	MS51957-23	SCREW, PAN HD, CROSS RECESSED	25
14	14	14	MS21045-C08	NUT, SELF LOCKING	24
2	2	2	MS51957-45	SCREW, PAN HD, CROSS RECESSED	23
4	4	4	MS51959-13	SCREW, FLAT HD, CROSS RECESSED	22
2	2	2	MS51959-43	SCREW, FLAT HD, CROSS RECESSED	21
8	8	8	MS51959-45	SCREW, FLAT HD, CROSS RECESSED	20
—	—	~~4~~	~~MS51959-47~~	~~SCREW, FLAT HD, CROSS RECESSED~~	19
8	8	8	MS51959-46	SCREW, FLAT HD, CROSS RECESSED	18
2	2	2	2016303	SCREW, SHOULDER	17
AR	AR	AR	MIL-S-22473 GRADE HV	SEALING & RETAINING COMPOUND	16
AR	AR	AR	MIL-A-5092 TYPE II	CEMENT	15
—	—	1	100+260-240	NAMEPLATE	14
1	1	1	1006294	RELAY, ARMATURE DPDT	13
2	2	2	101+013	RETAINER, CAPTIVE SCREW	12
2	2	2	2016342	BLOCK FASTENER ASSY	11
2	2	2	2016357	BRACKET, SUPPORT	10
2	2	2	2014370	BRACKET ASSY	9
1	1	1	2016341-001	BRACKET, LH	8
1	1	1	1006930-16	SLIDE	7
1	1	1	1006930-15	SLIDE	6
1	1	1	1006988-1	SLIDE	5
1	1	1	1006988-2	SLIDE	4
—	—	1	2014362-011	LOGIC PLATE ASSY	3
1	—	1	2014368-011	FRONT PANEL ASSY	2
1	1	1	2014367	CHASSIS	1

LIST OF MATERIALS

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. BOND FIND NO. 14, FIND NO 52 AND FIND NO. 55 TO FIND NO 1 USING FIND NO 15 AS APPLICABLE
3. SERIALIZE PER ND1002023
4. FABRICATE PER ND1002032 EXCEPT USE FIND NO. 37
5. SOLDER PER ND1002071
6. ASSEMBLE FIND NOS. 17,20,[illegible],22,23,25,26 [illegible] USING FIND NO. 16
~~7. STAT SOLDE & FIN PER ND1002071~~

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS ±.xx ±.xxx
DECIMALS ±
ANGLES ±
DO NOT SCALE DRAWING
MATERIAL
2014042
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-2137
DRAWN [illegible] 6 AUG 65
CHECKED [illegible] 6 AUG 65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SELF TEST ASSEMBLY
COMPUTER TEST SET

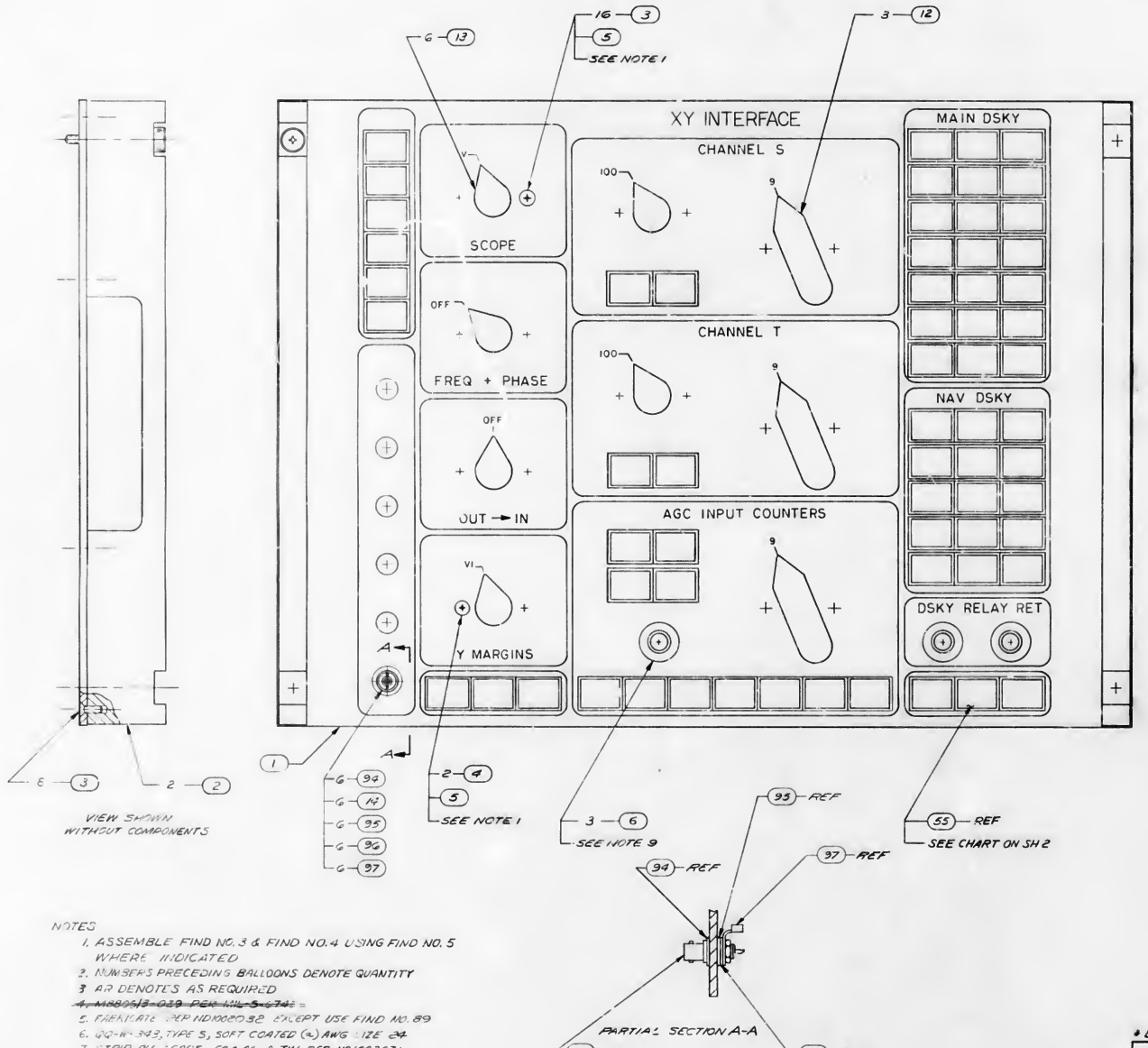
CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014366
SCALE 1/2 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014366 H

2014366 H

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25167		
1	CHANGED PER CCA R25318 DR W. K. CHK APPD		
-	CLASS B CHANGED PER CCA R25502		
A	CHANGED PER CCA R25752 DR CHK APPD		
B	CHANGES PER CCA R25887 AND CLASS A RELEASED PER TDRR 26218		
C	CHANGED PER TDRR 26701 DR CHK APPD		
D	CHANGED PER TDRR 26694 DR CHK APPD		
E	CHANGED PER TDRR 28118 DR CHK APPD		



NOTES

1. ASSEMBLE FIND NO. 3 & FIND NO. 4 USING FIND NO. 5 WHERE INDICATED
2. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
3. AR DENOTES AS REQUIRED
4. ~~MS90518-029 PER MIL-S-7742~~
5. FABRICATE PER ND1002032 EXCEPT USE FIND NO. 89
6. QQ-W-343, TYPE S, SOFT COATED (a) AWG SIZE 24
7. STRIP ALL LEADS .50 ±.06 & TIN PER ND1002071
8. SOLDER PER ND1002071
9. APPLY FIND 5 TO INTERNAL THREADS OF FIND 6
10. SPOT TIE LEGS TO WAFER SPACERS OF S1, S2 & S3 SO THAT WIRES ARE HELD AS CLOSE AS POSSIBLE TO SWITCHES

PARTS LIST CONTINUED ON SHEET 2

QTY REQD	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1	1006404-067	LIGHT, INDICATOR - LENS	45
1	1	-062		44
1	1	-063		43
1	1	-064		42
1	1	-006		41
1	1	-060		40
1	1	-061		39
1	1	-057		38
1	1	-058		37
1	1	-059		36
1	1	-054		35
1	1	-055		34
1	1	-056		33
1	1	-051		32
1	1	-052		31
1	1	-053		30
1	1	-048		29
1	1	-049		28
1	1	-050		27
1	1	-045		26
1	1	-046		25
1	1	-047		24
1	1	-042		23
1	1	-043		22
1	1	-044		21
1	1	-039		20
1	1	-040		19
1	1	-041	- LENS	18
39	39	-005	- DIS SCRN	17
39	39	-079	- COLOR FLTR	16
39	39	1006404-001	LIGHT, INDICATOR-DSC UNIT	15
6	6	MS35179-1094A	CONNECTOR, ELECTRICAL	14
6	6	MS91328-2K2B	KNOB, CONTROL, POINTER	13
3	3	1006928	KNOB, BAR	12
1	1	IC06462-001	SWITCH, ROTARY	11
1	1	1006257-000	SWITCH, ROTARY	10
1	1	1006961-001	SWITCH, ROTARY	9
2	2	1006257-002	SWITCH, ROTARY	8
3	3	IC06892-3	SWITCH, ROTARY	7
3	3	MS25083-3C	SWITCH, PUSH	6
AR	AR	MIL-S-22473, GR HV	SEALING & REMINING COMP	5
2	2	MS51959-29	SCREW, MACH, FLAT HD	4
24	24	MS51959-44	SCREW, MACH, FLAT HD	3
2	2	1014215-7	HANDLE ASSY	2
1	1	2014350	PANEL, FRONT	1
-021	-011		LIST OF MATERIALS	

* DENOTES LENGTH IN FEET

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx ±, .xxx ±, DECIMALS .x ±, ANGLES °

DO NOT SCALE DRAWING

MATERIAL

2014040
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 30 JUN 65
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRONT PANEL ASSY
X Y INTERFACE
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014375
SCALE 1/1 | WT | SHEET 1 OF 2

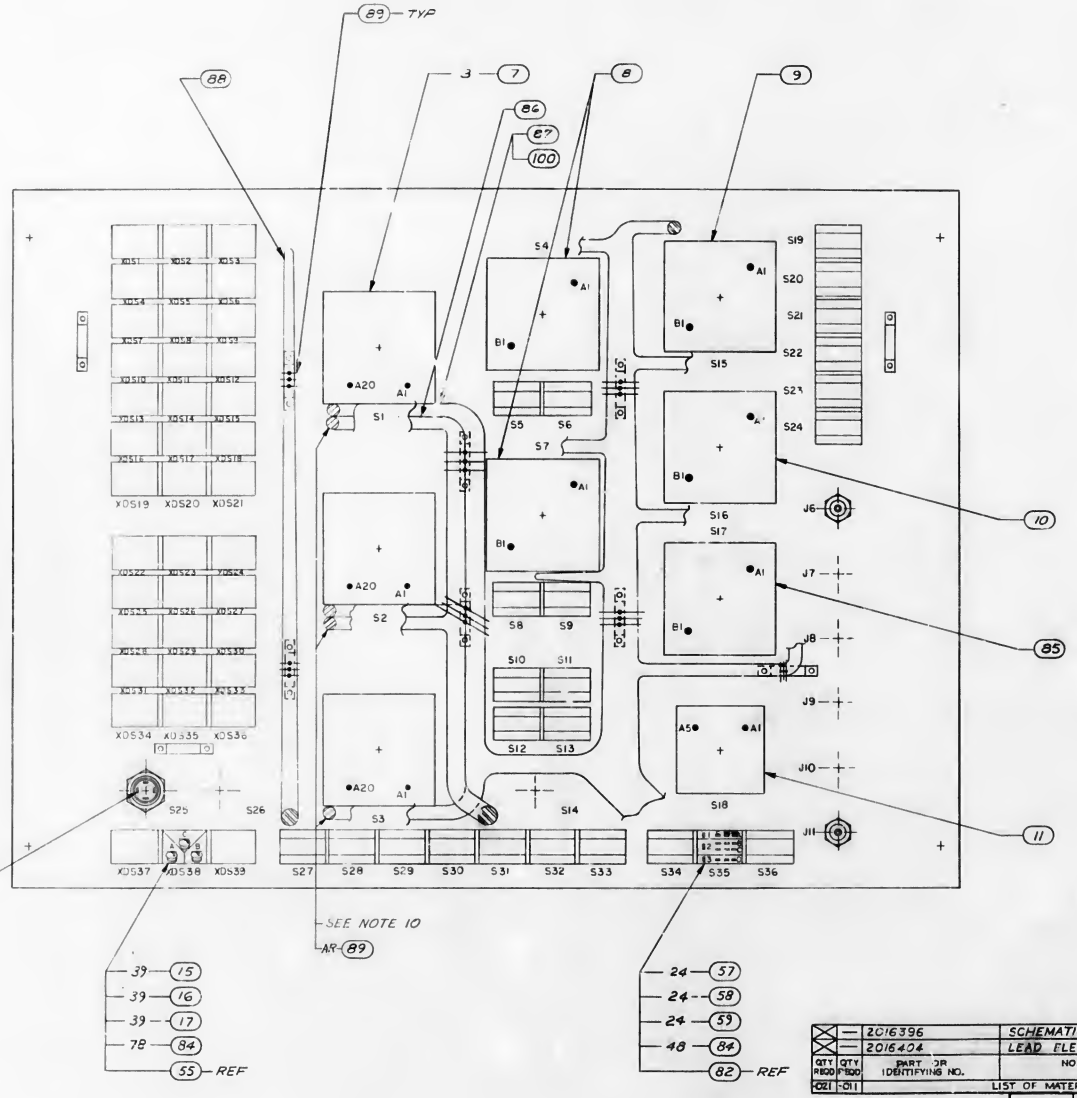
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-7032/7

2014375 E

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25318	9/8/65	
1	CHANGED PER CCA R25318 DR W. Kelly CHK APPD	10/6/65	
–	CLASS B CHANGED PER CCA R25502	10/26/65	
A	CHANGED PER CCA R 25753 DR CHK APPD	11/16/65	
B	CHANGED PER CCA R25847 AND CLASS A RELEASED AR 7040	12/16/65	
C	CHANGED PER TDRR 26701 DR CHK APPD	3/16/66	
D	CHANGED PER TDRR 26694 DR CHK APPD	3/16/66	
E	CHANGED PER TDRR 28118 DR W. Kruger CHK APPD	7/1/66	

LENS INSTALLATION

REF DES	FIND NO.	REF DES	FIND NO.
DS1	15	DS38	55
DS2	19	DS39	56
DS3	20		
DS4	21		
DS5	22		
DS6	23	S5	60
DS7	24	S6	61
DS8	25	S8	62
DS9	26	S9	63
DS10	27	S10	64
DS11	28	S11	65
DS12	29	S12	66
DS13	30	S13	67
DS14	31	S19	68
DS15	32	S20	69
DS16	33	S21	70
DS17	34	S22	71
DS18	35	S23	72
DS19	36	S24	73
DS20	37	S27	74
DS21	38	S29	75
DS22	39	S29	76
DS23	40	S30	77
DS24	41	S31	78, 99
DS25	42	S32	79
DS26	43	S33	80
DS27	44	S34	81
DS28	45	S35	82
DS29	46	S36	83
DS30	47		
DS31	48		
DS32	49		
DS33	50		
DS34	51		
DS35	52		
DS36	53		
DS37	54		



NOT SHOWN	#	06	0.6	MIL-W-16878/4 E22 BLK
		6	G	1006950-1
		6	G	AN960CG16L
		6	G	1006988-10
		6	G	102037G
NOT SHOWN	#	24	24.0	1006776-21
NOT SHOWN	#	10.3	10.3	SEE NOTE 6
NOT SHOWN	#	600	600	MIL-W-16878/4 E24 WHT
NOT SHOWN	#	06	0.3	MIL-W-16878/4 E24 BLK

QTY REQD -021	QTY REQD -011	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
—	—	2016396	SCHEMATIC	REF
—	—	2016404	LEAD ELEC	REF
		LIST OF MATERIALS		
—	—	2014179	SCHEMATIC	REF
—	—	2014464	LEAD ELEC	REF
1	—	2016416-011	WIRING HARNESS D	100
1	—	1006405-138	SWITCH, PUSH-LENS	99
06	0.6	MIL-W-16878/4 E22 BLK	WIRE, ELEC	98
6	G	1006950-1	TERMINAL	97
6	G	AN960CG16L	WASHER, FLAT	96
6	G	1006988-10	WASHER, NYLON	95
6	G	102037G	WASHER, INSULATING	94
24	24.0	1006776-21	SLEEVING, INSULATION	93
10.3	10.3	SEE NOTE 6	WIRE, ELEC	92
600	600	MIL-W-16878/4 E24 WHT	WIRE, ELEC	91
06	0.3	MIL-W-16878/4 E24 BLK	WIRE, ELEC	90
AR	AR	1006458-004	TAPE, LACING	89
1	1	2014465-011	WIRING HARNESS, E	88
—	1	2014467-011	WIRING HARNESS, D	87
1	1	2014468-011	WIRING HARNESS, C	86
1	1	1006257-001	SWITCH, ROTARY	85
126	126	1006407-003	LAMP, BULB	84
1	1	1006405-038	SWITCH, PUSH-LENS	83
1	1	-037		82
1	1	-036		81
1	1	-139		80
1	1	-135		79
—	1	-185		78
1	1	-137		77
1	1	-138		76
1	1	-140		75
1	1	-035		74
1	1	-039		73
1	1	-149		72
1	1	-148		71
1	1	-147		70
1	1	-146		69
1	1	-145		68
1	1	-192		67
1	1	-143		66
1	1	-141		65
1	1	-142		64
1	1	-152		63
1	1	-153		62
1	1	-150		61
1	1	-151	-LENS	60
24	24	-003	-DIS SCRN	59
24	24	-002	-COLOR FILTER	58
24	24	1006405-001	SWITCH, PUSH-BASIC UNIT	57
1	1	1006404-007	LIGHT, INDICATOR-LENS	56
1	1	-034		55
1	1	-035		54
1	1	-071		53
1	1	-072		52
1	1	-073		51
1	1	-068		50
1	1	-069		49
1	1	-070		48
1	1	-065		47
1	1	1006404-066	LIGHT, INDICATOR-LENS	46

QTY REQD -021	QTY REQD -011	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx ±.01, .xxx ±.005, ANGLES ±0°
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN Bob Jones DATE 30 JUN 65
CHECKED R. Rogers 16 AUG 65
APPROVAL R.C. Smith 31 AUG 65
APPROVAL
APPROVAL
NASA APPROVAL A. G. Mitchell
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

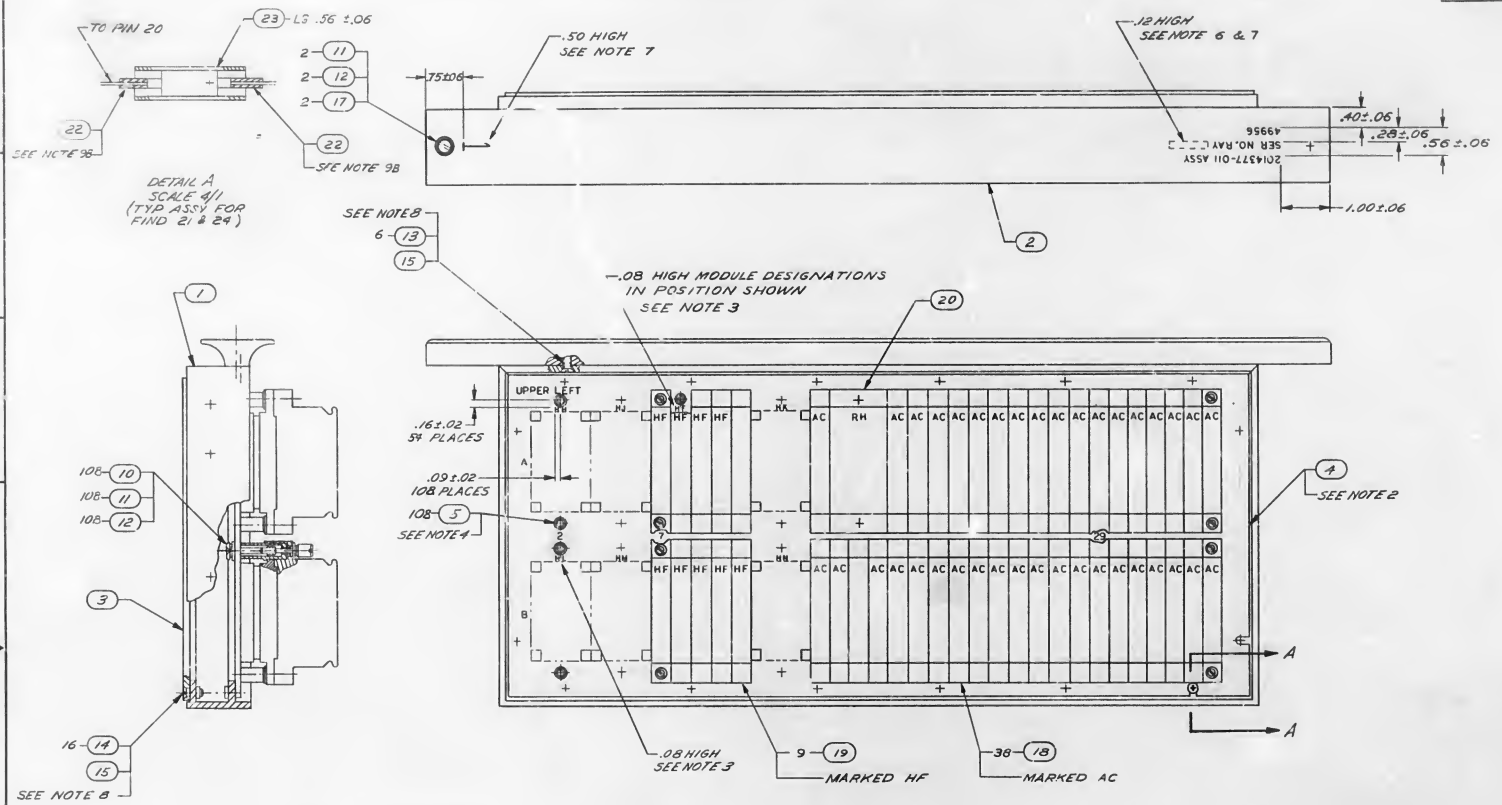
FRONT PANEL ASSY X Y INTERFACE COMPUTER TEST SET

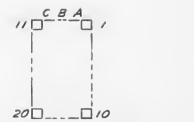
CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014375
SCALE 1/1 | WT | SHEET 2 of 2

2014375 E

2014377 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25015		
1	CHANGED PER CCA R25485 DR CHK APPD		
—	CLASS B CHANGED PER CCA R25502		
A	CHANGED PER CCA R25621 DR CHK APPD		
B	CHANGED PER CCA R25711 DR CHK APPD		
C	CHANGED PER CCA R25887 & CLASS A P. RELEASED PER TDRR 26218		

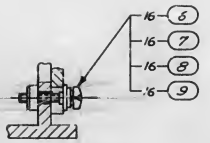




TYPICAL 60 PIN CONTACT GROUP DESIGNATIONS (REF ONLY)

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO. 4 USING FIND NO. 16 PER 2014100 & ND 1002031
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047
5. AR DENOTES AS REQUIRED
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
8. ASSEMBLE FIND NO. 13 & FIND NO. 14 USING FIND NO. 15
9. AFTER MACHINE WIRE WRAPPING PLATE, INSTALL FIND NO. 21 PER CHART A & DETAIL A
   9A. SOLDER PER ND1002071
   9B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY PIN LOCATION AT ASSY
~~10. MIL-I-631 TYPE F FORM Va GRADE a CLASS I CATEGORY I COLOR BLACK AWG SIZE NO. 24 FOR FIND NO. 24~~
11. MIL-I-631 TYPE F FORM Va GRADE a CLASS I CATEGORY I COLOR CLEAR AWG SIZE NO. 8 FOR FIND NO. 23

CHART A				
REF DES	FIND NO.	FROM	TO	REMARKS
C1	21	B14-01	A15-20	
C2		B14-03	B15-20	
C3		B14-05	B14-20	
C4		B14-09	B13-20	
C5	21	A13-15	A13-20	
C6	24	A13-16	A16-20	
C7	24	A15-16	A14-20	



SECTION A-A
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	
-011			
	2014196	LOGIC DIAGRAM	REF
	2014100	WIRE WRAP MACH CARD	REF
2	CS13AF153K	CAPACITOR .015uF ±10% 35 V	22
.6	SEE NOTE 11	SLEEVING	23
AR	1006776-197	SLEEVING, INSULATION	23
5	CS13AF010K	CAPACITOR 1uF 35V	21
1	2014004-011	MODULE, CLOCK	20
9	1014064	MODULE, DIODE	19
38	1014134	MODULE, NOR	18
2	1006998-1	SCREW, CAPTIVE	17
AR	1006945-1	WIRE, ELECTRICAL	16
AR	MIL-S-22473, GR-HV	SEALING & RETAINING COMPOUND	15
16	MS51959-15	SCREW, FLAT HD	14
6	MS51959-27	SCREW, FLAT HD	13
110	MS35338-79	WASHER, LOCK	12
110	1006997	WASHER, FLAT	11
108	MS51957-29	SCREW, PAN HD	10
16	1006986	WASHER, SHOULDERED, NYLON	9
16	MS35338-78	WASHER, LOCK	8
16	MS15795-803	WASHER, FLAT	7
16	MS51957-17	SCREW, PAN HD	6
106	1014212	STAND-OFF, PROGRAM	5
1	1006495-001	PLATE ASSY	4
1	1014026	COVER, CONN PLATE	3
1	1014258	SUPPORT, FRAME	2
1	1014014-2	FRAME	1

* DENOTES LENGTH IN FEET

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx ±.01, .xxx ±.005, ANGLES ±0°
DO NOT SCALE DRAWING
MATERIAL

2014040
NEXT ASSY | USED ON
APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-407
DRAWN W.B. Rogers DATE 7/26/65
CHECKED W. Frank 17JUL65
APPROVAL P.C. Dodge 7/26/65
APPROVAL J. Gage 7/26/65
APPROVAL [illegible] 8/26/65
NASA APPROVAL A.C. METCALFE
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

LOGIC PLATE ASSY NO. 1
XY INTERFACE
COMPUTER TEST SET

CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014377
SCALE 1/1 | WT | SHEET 1 OF 1

J 2014378

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA 25076		
1	REVISED PER CCA R25129 DR [illegible] CHK [illegible] APPD [illegible]		
2	CHANGED PER CCA R25485 DR [illegible] CHK [illegible] APPD [illegible]		
–	CLASS B CHANGED PER CCA R25502		
A	CHANGED PER CCA R25621 DR [illegible] CHK [illegible] APPD [illegible]		
B	CHANGED PER CCA R25711 DR [illegible] CHK [illegible] APPD [illegible]		
C	CHANGED PER CCA R25987 AND CLASS A RELEASED PER TDAR 2678		

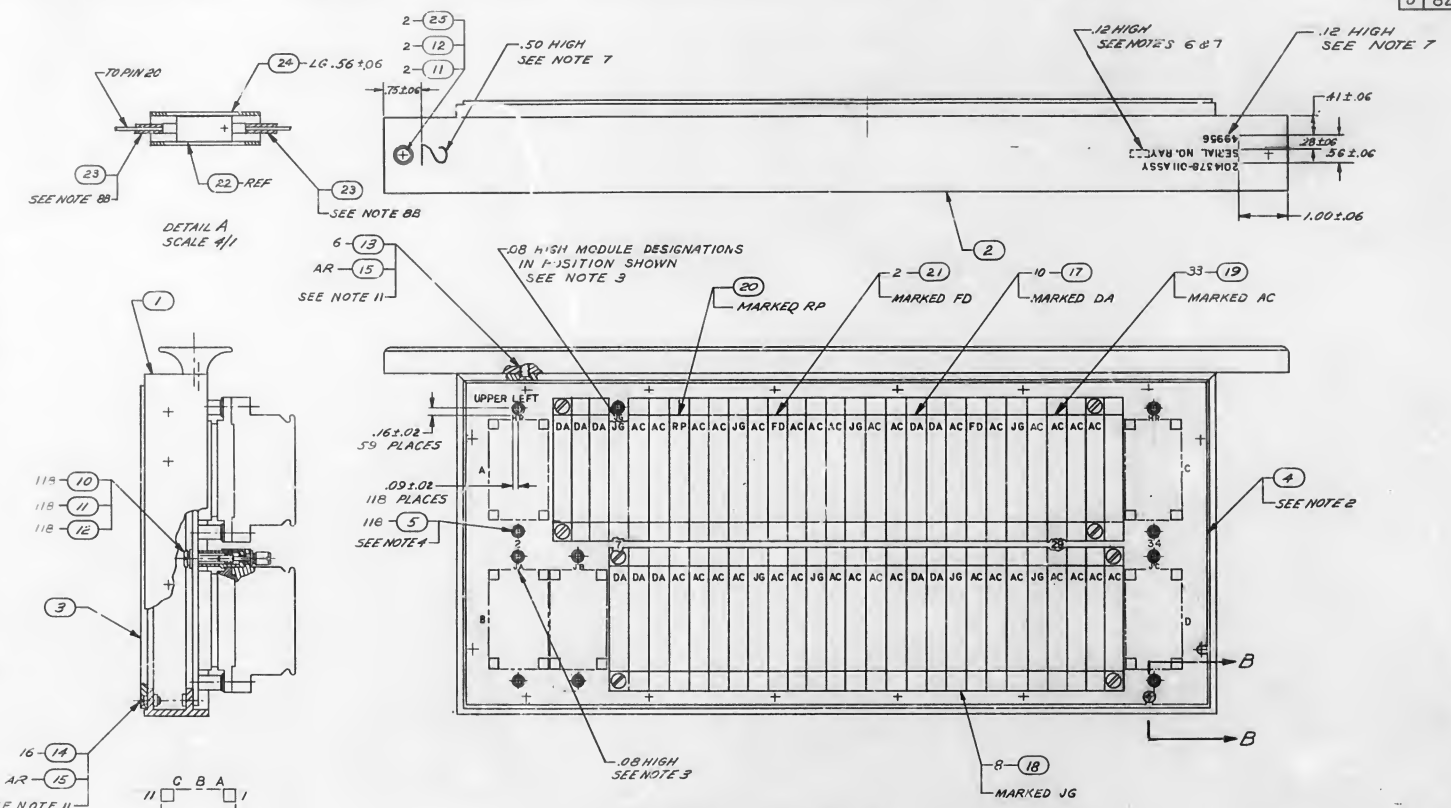


CHART A				
REF DES	FIND NO.	FROM	TO	REMARKS
C1	22	B28-12	B28-20	
C2		B32-08	B32-20	
C3		B31-13	B31-20	
C4		B28-16	B28-20	
C5		A25-13	A25-20	
C6		B30-02	B30-20	
C7		A29-04	A29-20	
C8		A15-18	A15-20	
C9		A07-12	A07-20	
C10		A11-08	A11-20	
C11		A13-17	A13-20	
C12		A33-06	A33-20	
C13		A31-01	A31-20	
C14		B33-07	B33-20	
C15		B05-19	B06-20	
C16	22	A34-10	A34-20	

NOTES
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. WIREWRAP FIND NO. 4 USING FIND NO. 16 PER 2014101 & ND1002031
3. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
4. LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 1014047
5. AR DENOTES AS REQUIRED
6. SERIALIZE PER ND1002023
7. MARK NORMAL GOTHIC CHARARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
8. AFTER MACHINE WIRE WRAPPING PLATE, INSTALL FIND NO. 22 PER CHART A & DETAIL A
   8A. SOLDER PER ND1002071
   8B. LENGTH OF SLEEVING ON COMPONENT LEADS TO BE DETERMINED BY PIN LOCATION AT ASSY
~~9. MIL-I-631 TYPE F FORM U GRADE T CLASS I CATEGORY I COLOR BLUE AWG SIZE NO. 24 FOR FIND NO. 23~~
10. MIL-I-631 TYPE F FORM U a GRADE a CLASS I CATEGORY I COLOR CLEAR AWG SIZE NO. 8 FOR FIND NO. 24
11. ASSEMBLE FIND NO. 13 & FIND NO. 14 USING FIND NO. 15

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	2014147	LOGIC FLOW DIAGRAM	REF
	2014101	WIREWRAP MACH. CARD	REF
2	1006998-1	SCREW, CAPTIVE	25
0.8	SEE NOTE 10	SLEEVING	24
AR	1006776-197	SLEEVING, INSULATION	23
16	CS13AF010K	CAPACITOR 1 MF 35 V	22
2	1014065-1	MODULE, RESISTOR 3.9 K	21
1	1014065-2	MODULE, RESISTOR 220 Ω	20
33	101403[illegible]	MODULE, NOR	19
8	1014065-3	MODULE, RESISTOR 510 Ω	18
10	1014058	MODULE, XFMR DRIVER	17
AR	1006945-1	WIRE, ELECTRICAL	16
AR	MIL-S-22473, GR MV	SEALING & RETAINING COMPOUND	15
16	MS51959-15	SCREW, FLAT HD	14
6	MS51959-27	SCREW, FLAT HD	13
120	MS35338-79	WASHER, LOCK	12
120	1006997	WASHER, FLAT	11
118	MS51957-29	SCREW, PAN HD	10
16	1006986	WASHER, SHOULDERED, NYLON	9
16	MS35338-78	WASHER, LOCK	8
16	MS15795-803	WASHER, FLAT	7
16	MS51957-17	SCREW, PAN HD	6
118	1014212	STAND-OFF, PROGRAM	5
1	1006995-001	PLATE ASSY	4
1	1014026	COVER, CONN PLATE	3
1	1014258	SUPPORT, FRAME	2
1	1014014-2	FRAME	1

* DENOTES LENGTH IN FEET

-011 LIST OF MATERIALS

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-4147
MANNED SPACECRAFT CENTER HOUSTON, TEXAS

LOGIC PLATE ASSY NO. 2
XY INTERFACE
COMPUTER TEST SET

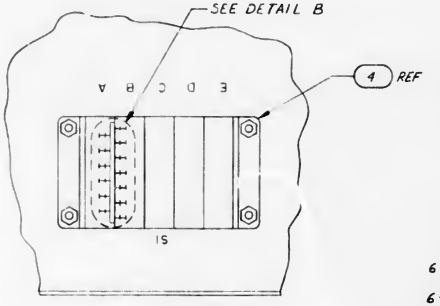
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx ±.03 .xxx ±.01 ANGLES ±1°
DO NOT SCALE DRAWING
MATERIAL

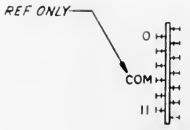
2014040
NEXT ASSY | USED ON
APPLICATION

CODE IDENT NO. 49956 | SIZE F | NASA DRAWING NO. 2014378
SCALE 1/1 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
C	REPLACES REV B WITH CHANGES PER TDRR 35532	5/JAN 68	

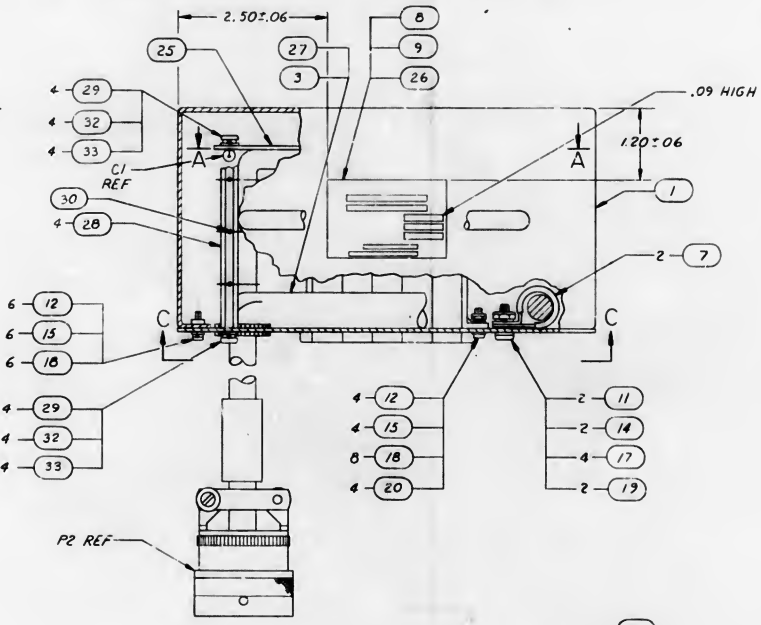


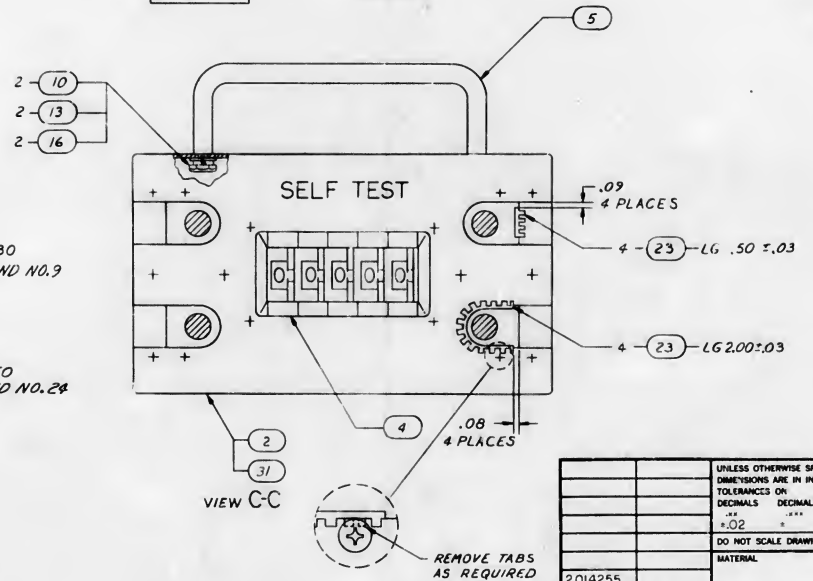


JUMPER CHART				
COND IDENT	FROM	TO	FIND NO.	AWG
B1	S1B-C	S1C-C	21	22
B2	S1C-C	S1D-C	21	22
B3	S1D-C	S1E-C	21	22
B4	S1E-5	S1E-8	21	22
B5	S1E-10	S1B-1	21	22

} FOR -021 ONLY

NOTES:
1. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
2. SOLDER PER ND1002071
3. FABRICATE PER ND1002032 EXCEPT USE FIND NO.30
4. BOND FIND NO.8 OR FIND NO.26 TO FIND NO.1 USING FIND NO.9
5. SERIALIZE PER ND1002023
6. MARK IDENTIFICATION PER ND1002019
7. QQ-W-343 TYPE S, AWG NO.22 SOLID COATED a FOR FIND NO.21
8. AR DENOTES AS REQUIRED
9. CUT FIND NO.23 TO LENGTHS SHOWN AND BOND TO FIND NO.1 AND FIND NO.2 OR FIND NO.31 USING FIND NO.24 DO NOT APPLY ADHESIVE TO PAINTED SURFACE
10. [A] DENOTES LENGTH IN FEET





© REPLACES REV B WITH CHANGES

	X	–	2016486	SCHEMATIC	REF
	X	–	2014191	SCHEMATIC	REF
	8	–	MS15795-805	WASHER, FLAT	33
	8	–	MS35338-136	WASHER, LOCK	32
	1	–	2016495	COVER	31
	AR	–	1006458-004	TAPE, LACING	30
	8	–	MS51957-29	SCREW, PAN HD	29
	4	–	1015981-009	STANDOFF	28
	1	–	2016497-011	WIRING HARNESS	27
	1	–	1004260-289	NAMEPLATE	26
	1	–	2016499-011	COMP BOARD ASSY	25
	AR	AR	1006981	ADHESIVE, SELF CURING	24
A	1.0	1.0	MS21266-2N	GROMMET, PLASTIC EDGING	23
	AR	AR	1006776-21	SLEEVING	22
A	1.0	0.5	SEE NOTE 7	WIRE ELEC.	21
	4	4	MS35649-44	NUT, HEX	20
	2	2	MS35649-84	NUT, HEX	19
	14	14	MS15795-803	WASHER, FLAT	18
	4	4	MS15795-807	WASHER, FLAT	17
	2	2	MS15795-808	WASHER, FLAT	16
	10	10	MS35338-135	WASHER, LOCK SPLIT	15
	2	2	MS35338-137	WASHER, LOCK SPLIT	14
	2	2	MS35338-138	WASHER, LOCK SPLIT	13
	10	10	MS51957-15	SCREW, PAN HD	12
	2	2	MS51957-44	SCREW, PAN HD	11
	2	2	MS20033-1	SCREW, HEX HD	10
	AR	AR	MIL-A-5092 TYPE II	CEMENT	9
	–	1	1004260-246	NAMEPLATE	8
	2	2	MS21919DG7	CLAMP	7
					6
	1	1	MS39087-3	HANDLE	5
	1	1	1006428-002	SWITCH	4
	–	1	2014190-011	WIRING HARNESS	3
	–	1	2014414	COVER	2
	1	1	2014413	HOUSING	1
QTY REQD -021	QTY REQD -011	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION		FIND NO.

LIST OF MATERIALS

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ±.02 DECIMALS .XXX ± ANGLES ±	RAYTHEON CO. LEXINGTON, MASS.
		DO NOT SCALE DRAWING	CONTRACT NO. NAS-9-497
		MATERIAL	DRAWN [illegible] DATE 10 OCT 67
			CHECKED [illegible] DATE 10 OCT 67
			APPROVAL [illegible] DATE 10 OCT 67
			APPROVAL [illegible] DATE 10 OCT 67
			APPROVAL [illegible] DATE 10/26/67
2014255			NASA APPROVAL [illegible]
NEXT ASSY	USED ON		APPROVAL [illegible]
APPLICATION			MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SELF TEST ASSEMBLY

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	2014392

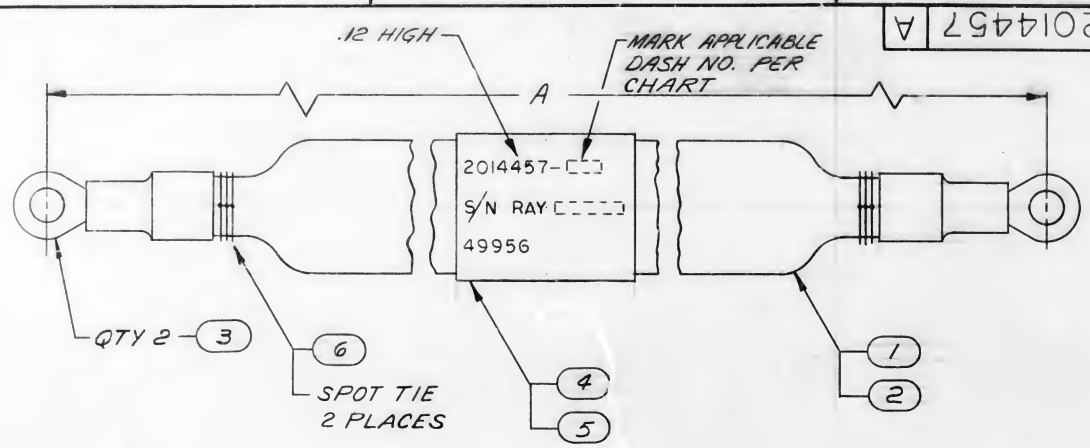
SCALE 1/1 | WT | SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014392 C

2014457 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25272	14 JUL 65	[illegible]
1	CHANGE PER CCA R25372 DR BKatsulas CHK [illegible] APPD [illegible]	11 NOV 65	[illegible]
—	CLASS B CHANGED PER CCA R25593	12/15/65	[illegible]
A	CHANGED PER CCA R25568 AND CLASS A RELEASED PER TDAR 2548	1/14/66	[illegible]



PART NO.	DIM A
2014457-011	18.00±.25
2014457-021	36.00±.50
2014457-031	24.00±.25
2014457-041	30.00±.50
2014457-051	8.00±.25
2014457-061	60.00±.50

NOTES
1. MIL-I-631 TYPE F, FORM U_a, GRADE A, CLASS 1 CATEGORY 1, I.D. 1.00. COLOR BLACK
2. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND 1002019 USING BLACK INK 1006256-001
3. SERIALIZE PER ND 1002023
4. CRIMP PER ND1002206
5. FABRICATE PER ND 1002032, EXCEPT USE FIND 6
6. CUT BRAID AND SLEEVING AS SHOWN

* DENOTES LENGTH IN FEET

-061	-051	-041	-031	-021	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	AR	AR	AR	AR	AR	1006458-004	TAPE, LACING	6
AR	AR	AR	AR	AR	AR	1006253	ADHESIVE	5
1	1	1	1	1	1	1006415-137	BAND MARKER	4
2	2	2	2	2	2	MS25036-26	TERMINAL, LUG	3
* 4.7	0.4	2.2	1.8	2.7	1.2	SEE NOTE 1	SLEEVING, INSULATION	2
* 5.0	0.6	2.5	2.0	3.0	1.5	1006442-002	BRAID, WIRE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
2014024	
2014042	
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ±.06 DECIMALS .xxx ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN B Katsulas DATE 15 SEP 65
CHECKED [illegible] 29 SEPT 65
APPROVAL [illegible] 5 Oct 65
APPROVAL [illegible] 6/6/65
APPROVAL [illegible] 10/7/65
NASA APPROVAL [illegible] 1/14/66
MIT APPROVAL [illegible]
MIT APPROVAL [illegible] 10/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSY, GROUND

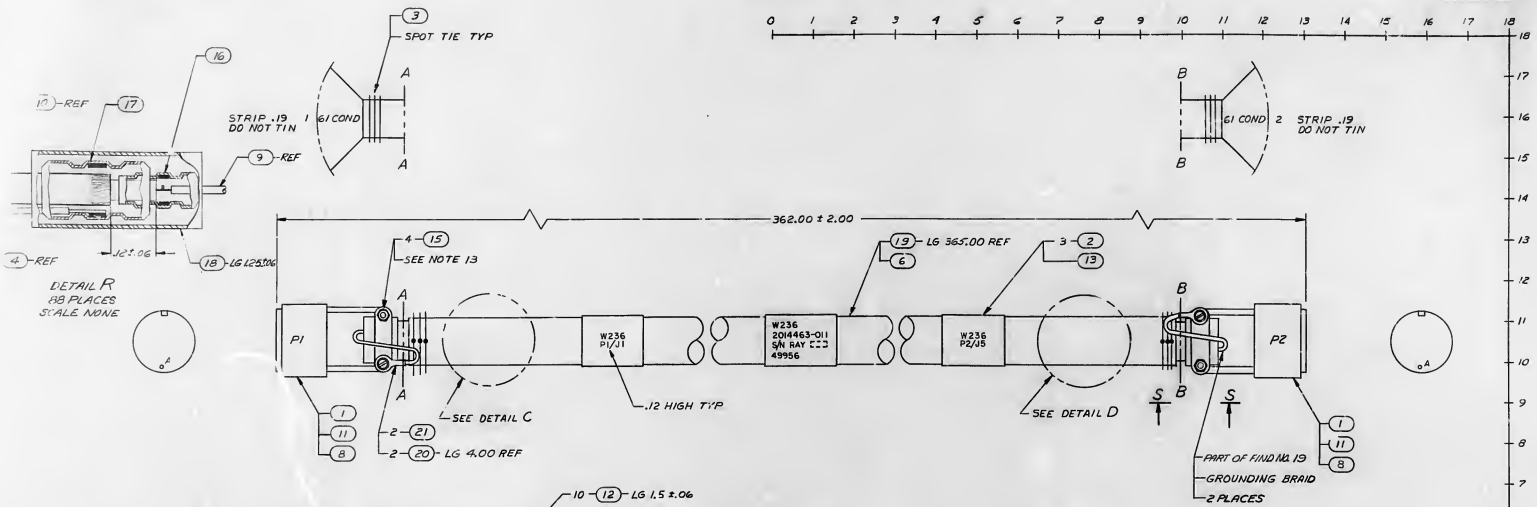
SIZE	CODE IDENT NO.	NASA DRAWING NO.
C	49956	2014457

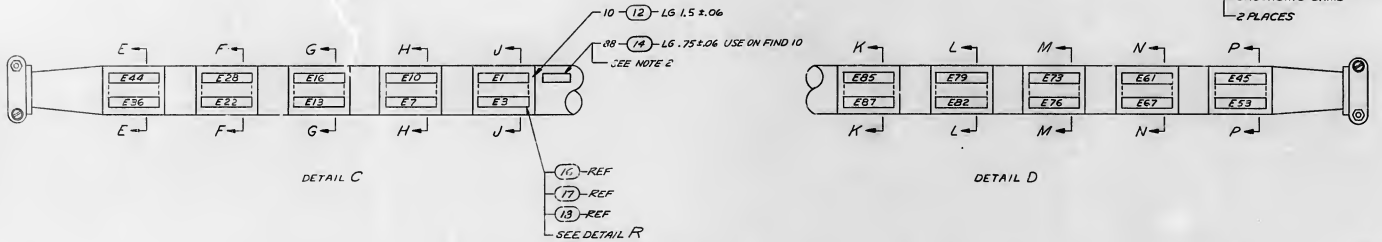
SCALE 1/1 WT SHEET 1 OF 1

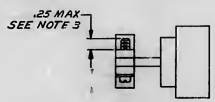
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014463 G

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
G	LTR RELEASED PER TDRR 27696	4-4-66	







NOTES
1. FABRICATE PER ND1002032 EXCEPT USE FIND 3
2. MARK CONDUCTOR IDENTIFICATION PER ND1002019
3. CRIMP PER ND1022206
4. SERIALIZE PER ND1002023
5. MARK NORMAL GOTHIC CHARACTERS PER ND1002019 USING BLACK INK 1006256-001
6. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS PREFIX WITH SUB-ASSEMBLY DESIGNATIONS
7. MIL-I-23053, CLASS I, BLACK, FOR FIND 12, SIZE 2.00 ID, FOR FIND 18 SIZE .250 ID
8. CUT SLEEVING LENGTH AS SHOWN
9. AR DENOTES AS REQUIRED
10. STRIP ALL LEADS .50 ± .06 Ø DO NOT TIN UNLESS OTHERWISE SPECIFIED
11. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
12. MIL-I-23053 CLASS I COLOR WHITE ID .187 FOR FIND 14
13. SCREWS SUPPLIED WITH FIND 1 TO BE CUT TO INDICATED LENGTH AFTER ASSY-INSTALL FIND 15
14. SOLDER PER ND1002071
15. ND1002155, TYPE III WITH Z TYPE TRACK & .003 ± .001 ALUMINUM FOIL, ID 1 1/2
16. MIL-I-631 TYPE F, FORM U2, GRADE 2, CLASS I CATEGORY I, COLOR BLACK, AWG SIZE NO. 4
17. FIND 19 MUST BE CUT TO PROVIDE A SUFFICIENT GROUNDING BRAID AT EACH END

* DENOTES LENGTH IN FEET

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	
2	MS25036-53	TERMINAL, LUG	21
* 0.7	SEE NOTE 16	INSULATION, ELECTRICAL	20
* 30.5	SEE NOTE 15	ZIPPER TUBING, PLASTIC	19
* 9.2	SEE NOTE 7	SLEEVING, SHRINK	18
BB	10104022	SLEEVE, SOLDER	17
BB	10104021	SLEEVE, SOLDER	16
4	MS24679-22	NUT, PLAIN, CAP	15
* 5.5	SEE NOTE 12	SLEEVING, SHRINK	14
AR	1006253	ADHESIVE	13
* 1.9	SEE NOTE 7	SLEEVING	12
2	1020370-23	BUSHING	11
* 300	RG180B/U	WIRE, COAX	10
* 900	MIL-W-16878/4 E22	WIRE, ELEC WHT	9
2	1020370-19	BUSHING	8
~~88~~	~~1006426~~	~~FERRULE, COAX~~	~~7~~
AR	1006699	SOLVENT	6
~~* 30~~	~~1006256-9~~	~~INSULATION SLEEVING~~	~~5~~
* 36	MIL-W-16878/4 E22	WIRE, ELEC BLK	4
AR	1006458-004	TAPE, LACING	3
3	1006618-171	BAND MARKER, CABLE	2
2	MS3128F-24-61PX	CONNECTOR, PLUG	1

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ± .03, .XXX ± , ANGLES ±	
		DO NOT SCALE DRAWING	
2014064		MATERIAL	
2014265			
NEXT ASSY	USED ON		
APPLICATION			

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-4307
DRAWN [illegible] DATE 10 MAR 66
CHECKED [illegible] 10 MAR 66
APPROVAL [illegible] 10 MAR 66
MFG ENG. D. [illegible] 10 MAR 66
APPROVAL [illegible] 10 MAR 66
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 4-4-66
MIT APPROVAL [illegible] 4-4-66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY
W236

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	J	2014463

SCALE 1/1 WT. SHEET 1 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014463 G

2014463 G

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
G	CLASS A RELEASED PER TDRR 27696	4-1-66	[illegible]

ASSEMBLY INFORMATION CHART

FROM				DESCRIPTION			TO		
REMARKS	COND IDENT	STA NO.	DES	COLOR	AWG	FIND NO.	STA NO.	DES	REMARKS
	A1	1	P1-R	WHT	22	9	2	P2-R	
	A2	↓	P1-P	↓	↓	↓	↓	P2-P	
	A3		P1-N					P2-N	
	A4		P1-m					P2-m	
	A5		P1-k					P2-k	
	A6		P1-L					P2-L	
	A7		P1-J					P2-J	
	A8		P1-h					P2-h	
	A9		P1-F					P2-F	
	A10		P1-G				↓	P2-G	
	A11		P1-H				2	P2-H	
	A12		P1-X				△	E1	
	A13		P1-W				↓	E2	
	A14		P1-s					E3	
	A15		P1-r					E4	
	A16		P1-V					E5	
	A17		P1-g					E6	
	A18		P1-U					E7	
	A19		P1-T					E8	
	A20		P1-S					E9	
	A21		P1-t					E10	
	A22		P1-FF					E11	
	A23		P1-EE					E12	
	A24		P1-DD					E13	
	A25		P1-p					E14	
	A26		P1-n					E15	
	A27		P1-M					E16	
	A28		P1-CC					E17	
	A29		P1-BB					E18	
	A30		P1-MM					E19	
	A31		P1-NN					E20	
	A32		P1-GG					E21	
	A33		P1-u					E22	
	A34		P1-v					E23	
	A35		P1-HH					E24	
	A36		P1-JJ					E25	
	A37		P1-PP					E26	
	A38		P1-KK					E27	
	A39		P1-LL					E28	
	A40		P1-AA					E29	
	A41		P1-j					E30	
	A42		P1-K					E31	
	A43		P1-i					E32	
	A44		P1-z					E33	
	A45		P1-y					E34	
	A46		P1-x					E35	
	A47		P1-w					E36	
	A48		P1-c					E37	
	A49		P1-d					E38	
	A50		P1-C					E39	
	A51		P1-e					E40	
	A52		P1-D					E41	
	A53		P1-f					E42	
	A54	↓	P1-E					E43	
	A55	1	P1-g					E44	
	A56	2	P2-X					E45	
	A57	↓	P2-W					E46	
	A58		P2-s					E47	
	A59		P2-r					E48	
	A60		P2-V					E49	
	A61		P2-g					E50	
	A62		P2-U					E51	
	A63		P2-T					E52	
	A64		P2-S					E53	
	A65		P2-t					E54	
	A66		P2-FF					E55	
	A67		P2-EE					E56	
	A68		P2-DD					E57	
	A69		P2-p					E58	
	A70		P2-n					E59	
	A71		P2-M					E60	
	A72		P2-CC					E61	
	A73		P2-BB					E62	
	A74		P2-MM					E63	
	A75		P2-NN					E64	
	A76		P2-GG					E65	
	A77		P2-u					E66	
	A78		P2-v					E67	
	A79		P2-HH					E68	
	A80		P2-JJ					E69	
	A81		P2-PP					E70	
	A82		P2-KK					E71	
	A83		P2-LL					E72	
	A84		P2-AA					E73	
	A85		P2-j					E74	
	A86		P2-K					E75	
	A87		P2-i					E76	
	A88		P2-z					E77	
	A89		P2-y					E78	
	A90		P2-x					E79	
	A91		P2-w					E80	
	A92		P2-c					E81	
	A93	↓	P2-d	↓	↓	↓	↓	E82	
	A94	2	P2-C	WHT	22	9	△	E83	

ASSEMBLY INFORMATION CHART

FROM				DESCRIPTION			TO		
REMARKS	COND IDENT	STA NO.	DES	COLOR	AWG	FIND NO.	STA NO.	DES	REMARKS
	A95	2	P2-e	WHT	22	9	△	E84	
	A96	↓	P2-D	↓	↓	↓	↓	E85	
	A97		P2-f					E86	
	A98	↓	P2-E	↓	↓	↓		E87	
	A99	2	P2-g	WHT	22	9		E88	
	A100	△	E1	COAX / SHLD	30	10		E45	
	A101	↓	E2	COAX / SHLD	↓	↓		E46	
	A102		E3	COAX / SHLD				E47	
	A103		E4	COAX / SHLD				E48	
	A104		E5	COAX / SHLD				E49	
	A105		E6	COAX / SHLD				E50	
	A106		E7	COAX / SHLD				E51	
	A107		E8	COAX / SHLD				E52	
	A108		E9	COAX / SHLD				E53	
	A109		E10	COAX / SHLD				E54	
	A110		E11	COAX / SHLD				E55	
	A111		E12	COAX / SHLD				E56	
	A112		E13	COAX / SHLD				E57	
	A113		E14	COAX / SHLD				E58	
	A114		E15	COAX / SHLD				E59	
	A115		E16	COAX / SHLD				E60	
	A116		E17	COAX / SHLD				E61	
	A117		E18	COAX / SHLD				E62	
	A118		E19	COAX / SHLD				E63	
	A119		E20	COAX / SHLD				E64	
	A120		E21	COAX / SHLD				E65	
	A121		E22	COAX / SHLD				E66	
	A122		E23	COAX / SHLD				E67	
	A123		E24	COAX / SHLD				E68	
	A124		E25	COAX / SHLD				E69	
	A125		E26	COAX / SHLD				E70	
	A126		E27	COAX / SHLD				E71	
	A127		E28	COAX / SHLD				E72	
	A128		E29	COAX / SHLD				E73	
	A129		E30	COAX / SHLD				E74	
	A130		E31	COAX / SHLD				E75	
	A131		E32	COAX / SHLD				E76	
	A132		E33	COAX / SHLD				E77	
	A133		E34	COAX / SHLD				E78	
	A134		E35	COAX / SHLD				E79	
	A135		E36	COAX / SHLD				E80	
	A136		E37	COAX / SHLD				E81	
	A137		E38	COAX / SHLD				E82	
	A138		E39	COAX / SHLD				E83	
	A139		E40	COAX / SHLD				E84	
	A140		E41	COAX / SHLD				E85	
	A141		E42	COAX / SHLD				E86	
	A142		E43	COAX / SHLD	↓	↓	↓	E87	
	A143	↓	E44	COAX / SHLD	30	10	△	E88	
	A144	△	E1-SHLD	BLK	22	4	1	P1-Y	

ASSEMBLY INFORMATION CHART

FROM				DESCRIPTION			TO		
REMARKS	COND IDENT	STA NO.	DES	COLOR	AWG	FIND NO.	STA NO.	DES	REMARKS
	A145	△	E1-SHLD	BLK	22	4	△	E2-SHLD	
	A146	↓	E2	↓	↓	↓	↓	E3	
	A147		E3					E4	
	A148		E4					E5	
	A149		E5					E6	
	A150		E6					E7	
	A151		E7				↓	E8	
	A152		E8				△	E9-SHLD	
	A153		E10				1	P1-Z	
	A154		E10				△	E11-SHLD	
	A155		E11				↓	E12	
	A156		E12					E13	
	A157		E13					E14	
	A158		E14					E15	
	A159		E16					E17	
	A160		E17					E18	
	A161		E18					E19	
	A162		E19					E20	
	A163		E20				↓	E21	
	A164		E21				△	E22-SHLD	
	A165		E22				1	P1-a	
	A166		E23				1	P1-b	
	A167		E23				△	E24-SHLD	
	A168		E24				↓	E25	
	A169		E25					E26	
	A170		E26					E27	
	A171		E27					E28	
	A172		E28					E29	
	A173		E29					E30	
	A174		E31					E32	
	A175		E32					E33	
	A176		E33					E34	
	A177		E34					E35	
	A178		E35				↓	E36	
	A179		E36				△	E37-SHLD	
	A180		E37				1	P1-A	
	A181		E38				1	P1-B	
	A182		E38				△	E39-SHLD	
	A183		E39				↓	E40	
	A184		E40					E41	
	A185		E41					E42	
	A186		E42				↓	E43	
	A187		E43				△	E44-SHLD	
	A188		E45				2	P2-Y	
	A189		E45				△	E46-SHLD	
	A190		E46				↓	E47	
	A191		E47					E48	
	A192		E48					E49	
	A193		E49					E50	
	A194		E50					E51	
	A195		E51				↓	E52	
	A196		E52				△	E53-SHLD	
	A197		E54				2	P2-Z	
	A198		E54				△	E55-SHLD	
	A199		E55				↓	E56	
	A200		E56					E57	
	A201		E57					E58	
	A202		E58					E59	
	A203		E60					E61	
	A204		E61					E62	
	A205		E62					E63	
	A206		E63					E64	
	A207		E64				↓	E65	
	A208		E65				△	E66-SHLD	
	A209		E66				2	P2-a	
	A210		E67				2	P2-b	
	A211		E67				△	E68-SHLD	
	A212		E68				↓	E69	
	A213		E69					E70	
	A214		E70					E71	
	A215		E71					E72	
	A216		E72					E73	
	A217		E73					E74	
	A218		E75					E76	
	A219		E76					E77	
	A220		E77					E78	
	A221		E78					E79	
	A222		E79				↓	E80	
	A223		E80				△	E81-SHLD	
	A224		E81				2	P2-A	
	A225		E82				2	P2-B	
	A226		E82				△	E83-SHLD	
	A227		E83				↓	E84	
	A228		E84					E85	
	A229		E85					E86	
	A230	↓	E86	↓	↓	↓	↓	E87	
	A231	△	E87-SHLD	BLK	22	4	△	E88-SHLD	

△ DENOTES INTERNAL CONNECTION
~~△ STRIP .31 & TIN .06~~
~~△ STRIP .44 & TIN .06~~
~~△ STRIP .25, DO NOT TIN~~

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN P. [illegible] DATE [illegible]
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL A. G. METZGER
MIT APPROVAL [illegible] 4-4-66
MIT APPROVAL [illegible] 3/23/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

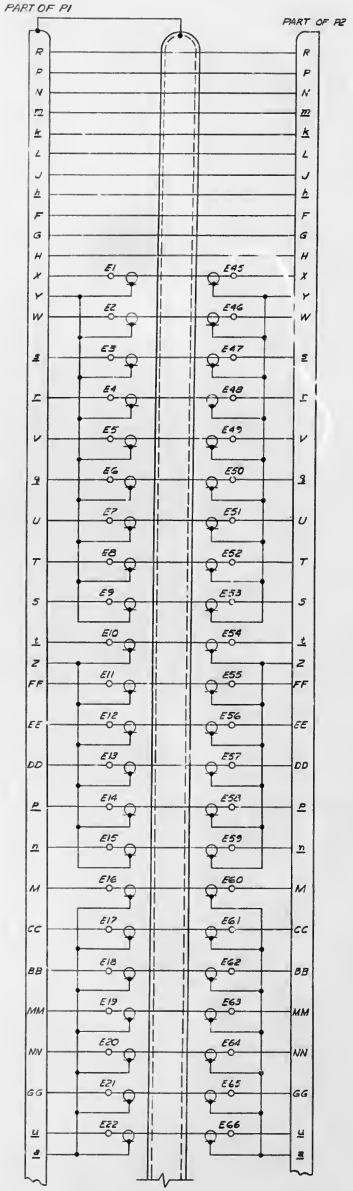
CABLE ASSEMBLY
W236

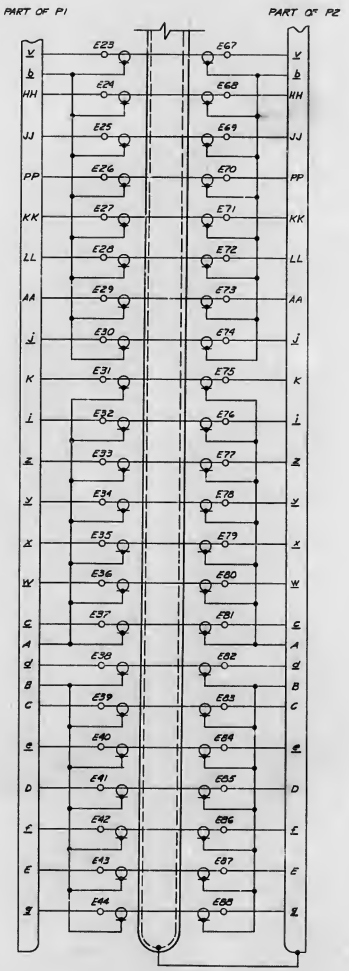
CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	J	2014463
SCALE NONE	WT	SHEET 2 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014463 G

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
G	CLASS A RELEASED PER TDRR 27676	4-14-66	





QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

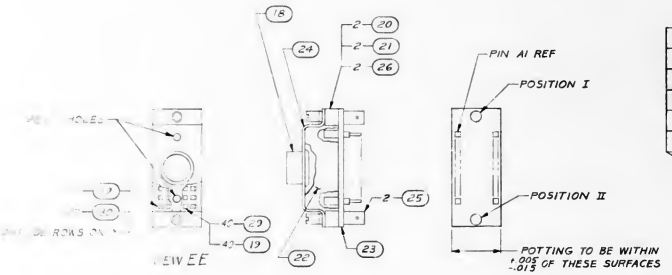
CABLE ASSEMBLY
W236

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014463
SCALE | WT. | SHEET 3 OF 3

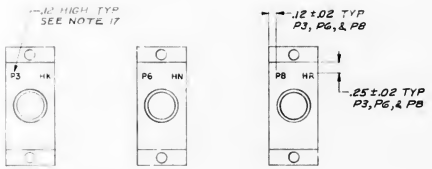
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS ± | DECIMALS ± | ANGLES ±
.xx .xxx °
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

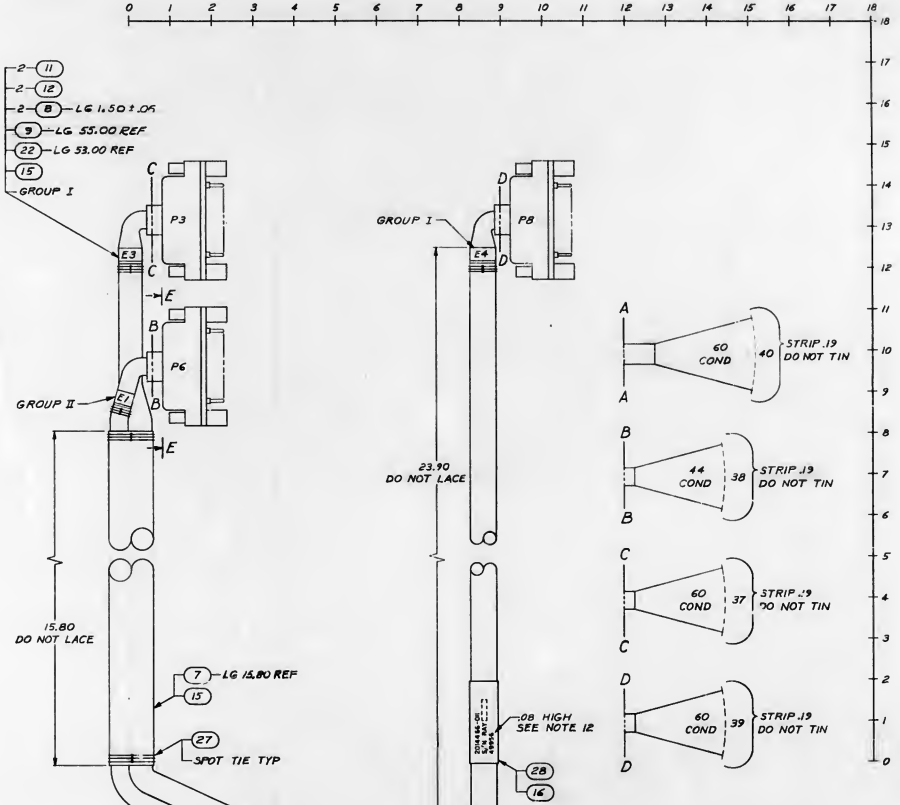
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R23283		
1	CHANGED PER CCA R23448 DR# CHK APPD		
—	CLASS B NO CHANGE PER CCA R23502		
A	CHANGED PER CCA R23595 DR# CHK APPD		
#	CHANGED PER CCA R23799 AND CLASS A RELEASED PER TDR 1472		

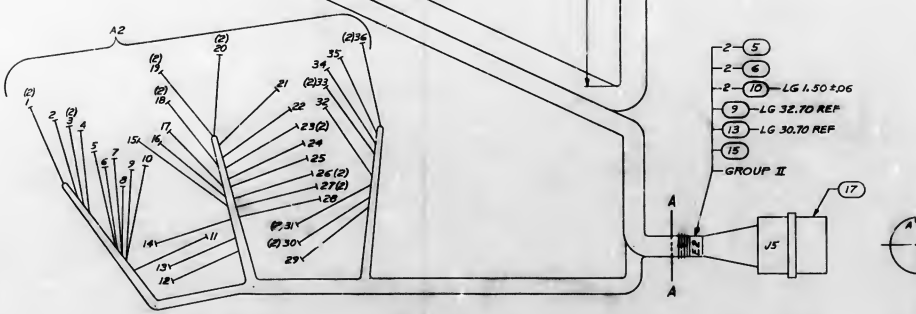


3 PLACES
P3, P6 & P8



MARKING VIEWS





NOTES

1. FABRICATE PER ND 1002032 EXCEPT USE FIND 27
2. STRIP ALL LEADS .50±.06 AND TIN PER ND1002071 UNLESS OTHERWISE SPECIFIED
3. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
4. CRIMP PER ND 1002206
5. MARK CONDUCTOR IDENTIFICATION PER ND 1002019
6. SERIALIZE PER ND 1002023
7. POTTING TO BE FLUSH TO .04 BELOW TOP OF VENT HOLES OF FIND 24
8. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS PREFIX WITH SUB ASSEMBLY DESIGNATIONS
9. NUMBERS ENCLOSED IN PARENTHESES DENOTE NUMBER OF CONDUCTORS
10. LACE ENTIRE HARNESS CONFIGURATION UNLESS OTHERWISE SPECIFIED
11. AR DENOTES AS REQUIRED
12. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND 1002019 USING BLACK INK 1006656-001
13. POT PER ND 1002009 METHOD E & PRIME
14. MIL-I-23053 CLASS 1, COLOR BLACK, ID .750 FOR FIND 8 AND ID .500 FOR FIND 10
15. QQ-B-575 BRAID SIZE 3/8 ID, AWG 34 FOR FIND 9
16. LOCATE KEY IN POSITION PER KEY CODING CHART USING DWG 1014047
17. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND .002019 USING WHITE INK 1006271-01
18. ~~MIL-I-23053 CLASS 1, COLOR WHITE, ID .125 FOR FIND 14~~
19. SEAL INSULATORS AND TERMINALS PER ND1002004 TYPE VI

CONNECTOR	KEY CODING POSITION	
REF	I	II
P3	H	K
P6	H	N
P8	H	R

* DENOTES LENGTH IN FEET

	2014179	SCHEMATIC	REF
60	1014310	INSULATOR, CONTACT ELEC (MALE)	30
120	1006987	INSULATOR, CONTACT ELEC (MALE)	29
1	1006415-133	BAND, MARKER	28
AR	1006458-004	TAPE, LACING	27
6	1006997	WASHER, PLAIN FLAT	26
6	1014032	RECEPTACLE, INDEXING	25
3	1014024-3	BRACKET, ANGLE	24
3	1014021	PLATE, CONNECTOR	23
4.5	1006696-4	INSULATION, SLEEVING ELEC	22
6	MS35337-79	WASHER, LOCK	21
6	1006998-1	SCREW, CAPTIVE	20
180	1006995-000	CONTACT, ELEC., MALE, CRIMP	19
3	1020370-23	BUSHING	18
1	MS3120E-24-61S	CONNECTOR, ELEC	17
AR	1006253	ADHESIVE	16
AR	1006699	SOLVENT	15
~~2.5~~	SEE NOTE 18	~~INSULATION, SLEEVING SHRINK~~	~~14~~
2.6	1006696-3	INSULATION, SLEEVING ELEC	13
2	1000243-37	FERRULE, ELEC COND	12
2	1000242-33	FERRULE, ELEC COND	11
0.3	SEE NOTE 14	INSULATION, SLEEVING SHRINK	10
8.4	SEE NOTE 15	BRAID, SHIELD	9
0.3	SEE NOTE 14	INSULATION, SLEEVING SHRINK	8
1.4	1006696-6	INSULATION, SLEEVING ELEC	7
2	1000242-30	FERRULE, ELEC	6
2	1000243-34	FERRULE, ELEC	5
8.0	MIL-W-16878/4 E22	WIRE, ELEC BLK	4
850	MIL-W-16878/4 E24	WIRE, ELEC BLK	3
~~850~~	~~1018341-22~~	~~WIRE, ELEC WHT BLK TW PR~~	~~2~~
385	MIL-W-16878/4 E24	WIRE, ELEC WHT	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

DRAWN	RAYTHEON CO. LEXINGTON, MASS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
CONTRACT NO. NAS 9-153			
DESIGN	DATE	WIRING HARNESS BRANCHED B XY INTERFACE COMPUTER TEST SET	
CHECKED	DATE 30 SEP		
APPROVAL	DATE 1 OCT		
APPROVAL	DATE		
APPROVAL	DATE		
MASS APPROVAL	DATE	SIZE J	CODE IDENT NO. 49956
QUALITY APPROVAL	DATE 10/4/66		NASA DRAWING NO. 2014466
NET APPROVAL	DATE 10/4/66	SCALE 1/1	WT
MFG APPROVAL	DATE 10/4/66		SHEET 1 OF 2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX ±.03, .XXX ±, ANGLES ±
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014040
NEXT ASSY | USED ON
APPLICATION

ASSEMBLY INFORMATION CHART

REMARKS	FROM COND IDENT	FROM STA NO.	FROM WCR	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO.	TO STA NO.	TO DES	REMARKS
	B1	39	P8-A1	WHT	24	1	37	P3-A1	
	B2	↑	-A2	↑	↑	↑	↑	-A2	
	B3		-A3					-A3	
	B4		-A4					-A4	
	B5		-A5					-A5	
	B6		-A6					-A6	
	B7		-A7					-A7	
	B8		-A8					-A8	
	B9		-A9					-A9	
	B10		-A10					-A10	
	B11		-A11					-A11	
	B12		-A12					-A12	
	B13		-A13					-A13	
	B14		-A14					-A14	
	B15		-A15					-A15	
	B16		-A16					-A16	
	B17		-A17					-A17	
	B18		-A18					-A18	
	B19		P8-A19					P3-A19	
	B20		P8-B1					P3-B1	
	B21		-B2					-B2	
	B22		-B3					-B3	
	B23		-B4					-B4	
	B24		-B5					-B5	
	B25		-B6					-B6	
	B26		-B7					-B7	
	B27		-B8					-B8	
	B28		-B9					-B9	
	B29		-B10					-B10	
	B30		-B11					-B11	
	B31		-B12					-B12	
	B32		-B13					-B13	
	B33		-B14					-B14	
GROUP I	B34		-B15					-B15	
	B35		-B16					-B16	
	B36		-B17					-B17	
	B37		-B18					-B18	
	B38		P8-B19					P3-B19	
	B39		P8-C1					P3-C1	
	B40		-C2					-C2	
	B41		-C3					-C3	
	B42		-C4					-C4	
	B43		-C5					-C5	
	B44		-C6					-C6	
	B45		-C7					-C7	
	B46		-C8					-C8	
	B47		-C9					-C9	
	B48		-C10					-C10	
	B49		-C11					-C11	
	B50		-C12					-C12	
	B51		-C13					-C13	
	B52		-C14					-C14	
	B53		-C15					-C15	
	B54		-C16					-C16	
	B55		-C17					-C17	
	B56	↓	-C18	↓	↓	↓	↓	-C18	
	B57	39	P8-C19	WHT	24	1	37	P3-C19	
			E3	SHLD				E6	
	B58	35	P8-A20	BLK	22	4		E6	
	B59	△	E3	↑	↑	↑	37	P3-A20	
	B60	35	P8-B20					E6	
	B61	△	E3				37	P3-B20	
	B62	35	P8-C20	↓	↓	↓		E6	
	B63	△	E3	BLK	22	4	37	P3-C20	
	B64	38	P6-C2	WHT	24	1	40	J5-V	
	B65	↑	-C3	↑	↑	↑	↑	K	
	B66		-C4					M	
GROUP II	B67		-C5	↓	↓	↓		N	
	B68		-C6	WHT		1		P	
	B69		P6-C20	BLK		3		S	
	B70	↓	P6-B20	BLK	↓	3	↓	T	
	B71	39	P6-A20	BLK	24	3	40	J5-Z	

△ DENOTES INTERNAL CONNECTION

ASSEMBLY INFORMATION CHART

REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO.	TO STA NO.	TO DES	REMARKS
	B72	38	P6-C7	WHT	24	1	40	J5-L	
	B73	↑	-C8	WHT	↑	1	↑	U	
	B74		-C9	WHT		1		JJ	
	B75		-C10	BLK		3		W	
	B76		-C11	BLK		3		Y	
	B77		-C12	BLK		3		Z	
	B78		-C13	WHT		1		NN	
	B79		-C14	↑		↑		a	
	B80		-C15					AA	
	B81		-C16					BB	
	B82		-C17					CC	
	B83		-C18					DD	
GROUP II	B84		P6-C19					EE	
	B85		P6-B1					FF	
	B86		-B2					GG	
	B87		-B3					HH	
	B88		-B4					KK	
	B89	↓	-B5	↓	↓	↓	↓	a	
	B90	38	P6-B6	WHT	24	1	40	J5-b	
			E1	SHLD				E2	
	B91	38	P6-B10	BLK	22	4		E1	
	B92	△	E2	BLK	22	4	40	J5-PP	
	B93	38	P6-A13	WHT	24	1	19	A2-35	
	B94	↑	-A14	WHT	↑	1	12	36	
	B95	↓	-A15	WHT	↓	1	7	46	
	~~B96~~	38	P6-A16	WHT	24	1	9	A2-47	
	~~B97~~			WHT		~~2~~	36	1	
				BLK			20	19	
	~~B98~~			WHT		~~2~~	33	4	
				BLK			23	16	
	~~B99~~			WHT		~~2~~	31	7	
				BLK			26	10	
	~~B100~~			WHT		~~2~~	29	25	
				BLK			1	32	
	~~B101~~			WHT		~~2~~	28	28	
				BLK			3	80	
	~~B102~~			WHT		~~2~~	30	9	
		38	P6-A18	BLK			27	50	
	B103	40	J5-S	BLK	24	3	28	A2-21	
	B104	↑	LL	WHT	↑	1	5	56	
	B105		J	BLK		3	8	57	
	B106		MM	WHT		1	10	58	
	B107		V	↑		↑	32	6	
	B108		K				24	17	
	B109		U	↓		↓	11	48	
GROUP III	B110		X	WHT		1	2	39	
	B111		A	BLK		3	21	14	
	B112		D	↑		↑	35	2	
	B113		E	↓		↓	34	3	
	B114		F	BLK		3	22	15	
	B115		L	WHT		1	25	18	
	B116		Y	BLK		3	29	9	
	B117		d	WHT		1	17	30	
	B118		g	WHT		1	16	31	
	B119		f	WHT		1	4	41	
	B120		Q	BLK		3	6	45	
	B121	↓	b	BLK	↓	3	14	33	
	B122	40	J5-C	BLK	24	3	15	A2-32	
	~~B123~~			WHT		~~2~~	36	1	
				BLK			20	17	
	~~B124~~			WHT		~~2~~	33	2	
				BLK			23	16	
	~~B125~~			WHT		~~2~~	31	7	
				BLK			26	10	
	~~B126~~			WHT		~~2~~	29	25	
				BLK			1	32	
	~~B127~~			WHT		~~2~~	28	28	
				BLK			3	80	
	~~B128~~			WHT		~~2~~	30	9	
		40	J5-R	BLK	24		27	50	
	B129	36	P6-A1	WHT	24	1	36	A2-1	
	B130	↑	-A2	BLK	↑	3	20	-13	TWIST
	B131		-A3	WHT		1	33	-9	TWIST
	B132		-A4	BLK		3	23	-16	TWIST
	B133		-A5	WHT		1	31	-7	TWIST
	B134		-A6	BLK		3	26	-19	TWIST
	B135		-A9	WHT		1	19	-25	TWIST
	P136		-A10	BLK		3	1	-37	TWIST
	B137		-A11	WHT		1	18	-28	TWIST
	B138		-A12	BLK		3	3	-40	TWIST
	B139	↓	-A7	WHT		1	30	-8	TWIST
	B140	38	P6-A8	BLK		3	27	-20	TWIST
	B141	40	J5-C	WHT		1	36	-1	TWIST
	B142	↑	-B	BLK		3	20	-13	TWIST
	B143		-W	WHT		1	33	-9	TWIST
	B144		-H	BLK		3	23	-16	TWIST
	B145		-M	WHT		1	31	-7	TWIST
	B146		-N	BLK		3	26	-19	TWIST
	B147		-V	WHT		1	19	-25	TWIST
	B148		-W	BLK		3	1	-37	TWIST
	B149		-T	WHT		1	18	-28	TWIST
	B150		-Z	BLK		3	3	-40	TWIST
	B151	↓	-P	WHT	↓	1	30	-8	TWIST
	B152	40	J5-R	BLK	24	3	27	15-20	TWIST

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25293	2 NOV 83	[illegible]
1	CHANGED PER CCA R25448 OR REMARKS CHK [illegible] APPD [illegible]	2 NOV 83	[illegible]
-	CLASS B NO CHANGE PER VCA R25502	2 DEC 83	[illegible]
A	CHANGED PER CCA R25633 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
B	CHANGED PER CCAR 28-30 AND CLASS A RELEASED PER VCR R3472	[illegible]	[illegible]

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM NO.
		LIST OF MATERIALS	

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-4957
DRAWN [illegible] DATE 28 NOV 83
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
NRT APPROVAL [illegible]
NRT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

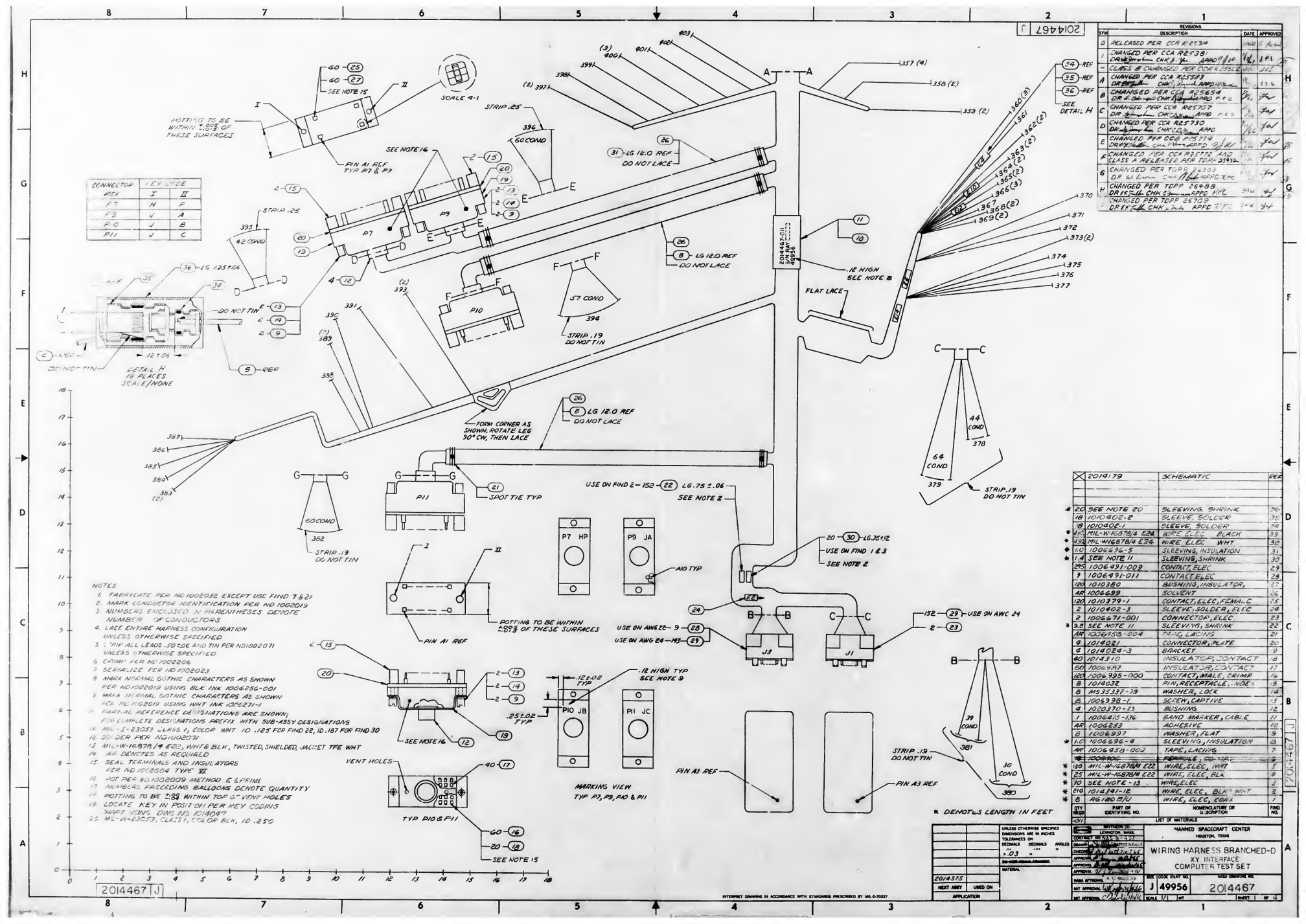
WIRING HARNESS BRANCHED
B
XY INTERFACE
COMPUTER TEST SET

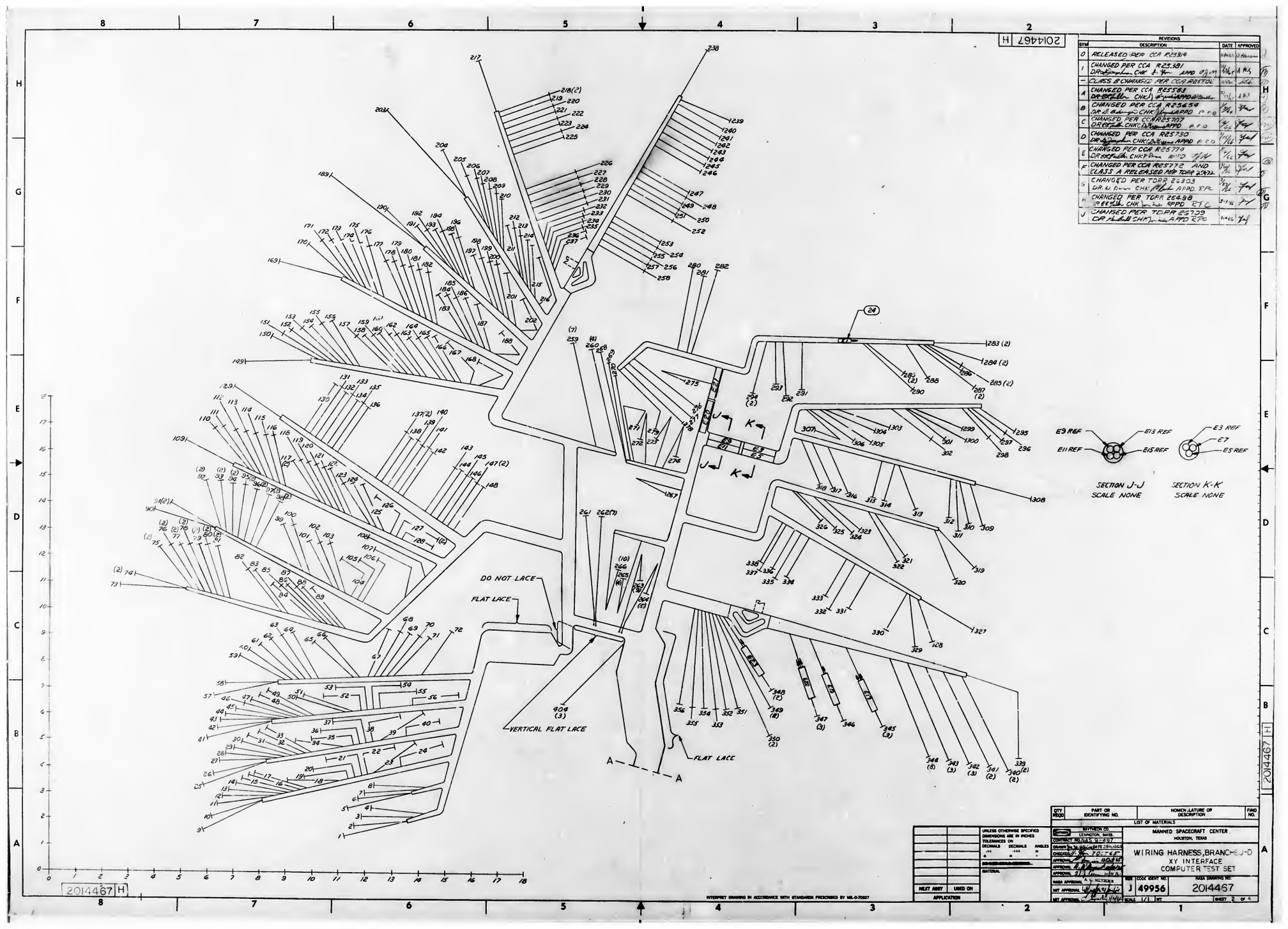
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX ± .03 .XXX ± .010 ANGLES ° ± 1°
DO NOT SCALE DRAWING
MATERIAL

NEXT ASSY | USED ON APPLICATION

CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014466
SCALE NONE | WT | SHEET 2 OF 2

2014466 B


2014467 J
REVISIONS
SYM DESCRIPTION DATE APPROVED
0 RELEASED PER CCA R25394
1 CHANGED PER CCA R25381
- CLASS B CHANGED PER CCA R25512
A CHANGED PER CCA R25593
B CHANGED PER CCA R25654
C CHANGED PER CCA R25727
D CHANGED PER CCA R25730
E CHANGED PER DCO R25774
F CHANGED PER CCA R25772 AND CLASS A RELEASED PER TDPR 25972
G CHANGED PER TDPR 26303
H CHANGED PER TDPR 26488
J CHANGED PER TDPR 26709
CONNECTOR KEY CODE
P1 I II
P7 H F
P8 J A
P10 J B
P11 J C
SCALE 4-1
POTTING TO BE WITHIN ±.093 OF THESE SURFACES
PIN A1 REF TYP P7 & P9
STRIP .25
60 COND
42 COND
SEE NOTE 16
LG 12.0 REF DO NOT LACE
LG 1.25±.06
DO NOT TIN
DETAIL H 18 PLACES SCALE/NONE
FORM CORNER AS SHOWN, ROTATE LEG 90° CW, THEN LACE
SPOT TIE TYP
57 COND
STRIP .19 DO NOT TIN
64 COND
44 COND
39 COND
30 COND
FLAT LACE
.12 HIGH SEE NOTE 8
USE ON FIND 2-152-22 LG.75±.06 SEE NOTE 2
USE ON FIND 1 & 3 SEE NOTE 2
A10 TYP
USE ON AWG 22-9 USE ON AWG 24-M3
USE ON AWG 24
PIN A1 REF
PIN A3 REF
MARKING VIEW TYP P7, P9, P10 & P11
VENT HOLES
TYP P10 & P11
SEE NOTE 15
* DENOTES LENGTH IN FEET
NOTES
1. FABRICATE PER ND 1002032 EXCEPT USE FIND 7 & 21
2. MARK CONDUCTOR IDENTIFICATION PER ND 1002019
3. NUMBERS ENCLOSED IN PARENTHESES DENOTE NUMBER OF CONDUCTORS
4. LACE ENTIRE HARNESS CONFIGURATION UNLESS OTHERWISE SPECIFIED
5. "P/P" ALL LEADS .50±.06 AND TIN PER ND 1002071 UNLESS OTHERWISE SPECIFIED
6. CRIMP PER NC 1002206
7. SERIALIZE PER ND 1002023
8. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND 1002019 USING BLK INK 1006256-001
9. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER NC 1002019 USING WHT INK 1006271-1
10. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS PREFIX WITH SUB-ASSY DESIGNATIONS
11. MIL-I-23053 CLASS 1, COLOR WHT ID .125 FOR FIND 22, ID .187 FOR FIND 30
12. SOLDER PER ND 1002071
13. MIL-W-16878/4 E22, WHT & BLK, TWISTED, SHIELDED, JACKET TFE WHT
14. AR DENOTES AS REQUIRED
15. SEAL TERMINALS AND INSULATORS PER ND 1002004 TYPE VI
16. HOT PER ND 1002009 METHOD E & F PINE
17. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
18. POTTING TO BE ±.093 WITHIN TOP 0.1" VENT HOLES
19. LOCATE KEY IN POSITION PER KEY CODING
20. HARNESS ASSY, DWG NO. 1014047
22. MIL-W-23053, CLASS 1, COLOR BLK, ID .250
2014379 SCHEMATIC REF
* 20 SEE NOTE 20 SLEEVING, SHRINK 36
18 1010402-2 SLEEVE, SOLDER 35
18 1010402-1 SLEEVE, SOLDER 34
* 330 MIL-W-16878/4 E24 WIRE, ELEC, BLACK 33
* 330 MIL-W-16878/4 E24 WIRE, ELEC, WHT 32
* 1.0 1006696-5 SLEEVING, INSULATION 31
* 1.4 SEE NOTE 11 SLEEVING, SHRINK 30
295 1006491-002 CONTACT, ELEC 29
9 1006491-011 CONTACT, ELEC 28
120 1010380 BUSHING, INSULATOR, 27
AR 1006699 SOLVENT 26
120 1010379-1 CONTACT, ELEC, FEMALE 25
2 1010402-3 SLEEVE, SOLDER, ELEC 24
2 1006691-001 CONNECTOR, ELEC 23
* 9.8 SEE NOTE 11 SLEEVING, SHRINK 22
AR 1006659-004 TAPE, LACING 21
9 1014021 CONNECTOR, PLATE 20
9 1014024-3 BRACKET 19
40 1014310 INSULATOR, CONTACT 18
80 1006947 INSULATOR, CONTACT 17
120 1006995-000 CONTACT, MALE, CRIMP 16
8 1014032 PIN, RECEPTACLE, NOES 15
8 MS35337-19 WASHER, LOCK 14
8 1006938-1 SCREW, CAPTIVE 13
4 1020370-23 BUSHING 12
1 1006615-136 BAND MARKER, CABLE 11
AR 1006233 ADHESIVE 10
8 1006937 WASHER, FLAT 9
* 1.0 1006696-8 SLEEVING, INSULATION 8
AR 1006658-002 TAPE, LACING 7
* 1006700-[illegible] FERRULE, [illegible] 6
* 130 MIL-W-16878/4 E22 WIRE, ELEC, WHT 5
* 25 MIL-W-16878/4 E22 WIRE, ELEC, BLK 4
* 10 SEE NOTE -13 WIRE, ELEC 3
* 210 1014381-12 WIRE, ELEC, BLK & WHT 2
* 6 RG180 B/U WIRE, ELEC, COAX 1
QTY REQD PART OR IDENTIFYING NO. NOMENCLATURE OR DESCRIPTION FIND NO.
-011 LIST OF MATERIALS
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .xx ±.03 .xxx ± ANGLES ±
2014375 NEXT ASSY USED ON APPLICATION
RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO NAS 9-497
MANNED SPACECRAFT CENTER HOUSTON, TEXAS
WIRING HARNESS BRANCHED-D
XY INTERFACE COMPUTER TEST SET
CODE IDENT NO. J 49956
NASA DRAWING NO. 2014467
SCALE 1/1 WT SHEET OF 4
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327


2014467 H
REVISIONS
SYM | DESCRIPTION | DATE | APPROVED
O RELEASED PER CCA R23316
I CHANGED PER CCA R23381
CLASS B CHANGED PER CCA R23502
A CHANGED PER CCA R23583
B CHANGED PER CCA R23634
C CHANGED PER CCA R23707
D CHANGED PER CCA R23780
E CHANGED PER CCA R23779
F CHANGED PER CCA R23772 AND CLASS A RELEASED PER TDRR 25972
G CHANGED PER TDRR 26303
H CHANGED PER TDRR 26488
J CHANGED PER TDRR 26729
DO NOT LACE
FLAT LACE
VERTICAL FLAT LACE
FLAT LACE
A
A
E9 REF
E11 REF
E13 REF
E15 REF
E3 REF
E7
E5 REF
SECTION J-J
SCALE NONE
SECTION K-K
SCALE NONE
QTY REQD | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION | FIND NO.
LIST OF MATERIALS
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-2457
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
WIRING HARNESS, BRANCH J-D
XY INTERFACE
COMPUTER TEST SET
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ANGLES
MATERIAL
NEXT ASSY | USED ON
APPLICATION
SIZE J
CODE IDENT NO. 49956
NASA DRAWING NO. 2014467
SCALE 1/1
WT.
SHEET 2 OF 4
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2014467 H

2014467 J

ASSEMBLY INFORMATION CHART

FROM REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	FROM FIND NO.	TO STA NO.	TO DES	REMARKS
	D1	379	J1-A3	WHT	24	2	381	J3-N3	
			-A2	BLK				-N4	
	D2		-A5	WHT				-N5	
			-A6	BLK				-N6	
	D3		-B	WHT				-N1	
			-B2	BLK			381	J3-N2	
	D4		-B3	WHT			395	P7-C5	
			-B4	BLK				-C6	
	D5		-B5	WHT				-C7	
			-B6	BLK				-C8	
	D6		-C7	WHT		2		-C3	
			-C8	BLK			395	P7-C4	
	D7		-C1	WHT		32	E3	S3A-6	TWIST
	D8		D2	BLK		33	47	S3B-6	
	D9		-D3	WHT		32	31	S3C-6	
	D10		D4	BLK		33	15	S3D-6	
	D11		-D5	WHT		32	64	S3A-7	
	D12		-D6	BLK		33	48	S3B-7	
	D13		-D7	WHT		32	32	S3C-7	
	D14		-D8	BLK		33	16	S3D-7	
	D15		-E1	WHT		32	65	S3A-P	
	D16		-E2	BLK		33	49	S3B 8	
	D17		-E3	WHT		32	33	S3C-8	
	D18		-E4	BLK		33	17	S3D-8	
	D19		-E5	WHT		32	36	S3C-11	
	D20		-E6	BLK		33	20	S3D-11	
	D21		-E7	WHT		32	68	S3A-11	
	D22	379	-E8	BLK		33	52	S3B-11	
	D23	379	-F1	WHT		32	37	S3C-12	
	D24		-F2	BLK		33	21	S3D-12	
	D25		-F3	WHT		32	69	S3A-12	
	D26		-F4	BLK		33	53	S3B-12	
	D27		-F5	WHT		32	34	S3C-9	
	D28		-F6	BLK		33	18	S3D-9	
	D29		-F7	WHT		32	66	S3A-9	
	D30		F8	BLK		33	50	S3B-9	
	D31		-G1	WHT		32	35	S3C-10	
	D32		-G2	BLK		33	19	S3D-10	
	D33		-G3	WHT		32	67	S3A-10	TWIST
	D34		-G4	BLK		33	51	S3B-10	
	D35		-G5	WHT		2	395	P7-C10	
			-G6	BLK				-C18	
	D36		-G7	WHT		2		-B1	
			-G8	BLK				-B2	
	D37		-H1	WHT		2		-B3	
			-H2	BLK			395	P7-E4	
	D38		-M7	WHT		32	71	S3A-14	TWIST
	D39		-M8	BLK		33	55	S3B-14	
	D40		-R1	WHT		32	38	S3C-13	
	D41		-R2	BLK		33	22	S3D-13	
	D42		-R3	WHT		32	39	S3C-14	
	D43		-R4	BLK		33	23	S3D-14	
	D44		-R5	WHT		32	40	S3C-15	
	D45		-R6	BLK		33	24	S3D-15	
	D46		-P7	WHT		32	72	S3A-15	TWIST
	D47		-P8	BLK		33	56	S3B-15	
	D48		-P1	WHT		2	39	P7-A1	
			-P2	BLK				-A2	
	D49		-P3	WHT		2		-A3	
			-P4	BLK				-A4	
	D50		-P5	WHT		2		-A5	
			-P6	BLK			395	P7-A6	
	D51		-R7	WHT		32	70	S3A-13	TWIST
	D52		-R8	BLK		33	54	S3B-13	
	D53		-S1	WHT		2	395	P7-B1	
	D54		-S2	BLK				-B12	
			-S3	WHT				-B13	
			-S4	BLK				-B14	
	D55		-S5	WHT				-B15	
			-S6	BLK				-B16	
	D56		-S7	WHT		2		-B17	
		379	-S8	BLK			395	P7-B18	
	D57	379	-T1	WHT		32	30	S3C-5	TWIST
	D58		-T2	BLK		33	14	S3D-5	
	D59		-T3	WHT		2	395	P7-B5	
	D60		-T4	BLK				-B6	
	D61		-T5	WHT		2		-B7	
			-T6	BLK				-B8	
	D62		-T7	WHT		2		-B9	
			-T8	BLK			395	P7-B10	
	D63		-U1	WHT		32	28	S3C-3	TWIST
	D64		-U2	BLK		33	12	S3D-3	
	D65		-U3	WHT		32	61	S3A-4	TWIST
	D66		-U4	BLK		33	45	S3B-4	
	D67		-U5	WHT		32	29	S3C-4	TWIST
	D68	379	J1-U7	WHT	24	32	62	S3A-5	TWIST
	D69		-U8	BLK		33	46	S3B-5	
	D70		-V1	WHT		32	26	S3C-1	
	D71		-V2	BLK		33	10	S3D-1	
	D72		-V3	WHT		32	59	S3A-2	
	D73		-V4	BLK		33	43	S3B-2	
	D74		-V5	WHT		32	27	S3C-2	
	D75		-V6	BLK		33	11	S3D-2	
	D76		-V7	WHT		32	60	S3A-3	TWIST
	D77		-V8	BLK		33	44	S3B-3	
	D78		-W1	WHT		2	395	P7-C11	
			-W2	BLK				-C12	
	D79		-W3	WHT		2		-C13	
			-W4	BLK				-C14	
	D80		-W5	WHT		2		-C15	
			-W6	BLK			395	P7-C16	
	D81		-W7	WHT		32	58	S3A-1	TWIST
	D82		-W8	BLK		33	42	S3B-1	
	D83		-X3	WHT		2	396	P7-C9	
			-X4	BLK				P7-C10	
	D84		-X5	WHT				P7-C1	
		379	J1-X6	BLK			396	P7-C2	
	D85	381	J3-G1	WHT			382	P11-C5	
			-G2	BLK				-C6	
	D86		-G3	WHT				-C7	
			-G4	BLK				-C8	
	D87		-H1	WHT				-C13	
			-H2	BLK				-C14	
	D88		-H3	WHT				-C15	
			-H4	BLK				-C16	
	D89		-J1	WHT				-B1	
			-J2	BLK				-B2	
	D90		-J3	WHT				-B3	
			-J4	BLK				-B4	
	D91		-K1	WHT				-B7	
			-K2	BLK				-B8	
	D92		-K3	WHT				-B9	
			-K4	BLK				-B10	
	D93		-L1	WHT				-B13	
			-L2	BLK				-B14	
	D94		-M1	WHT				-B15	
			-M2	BLK				-B16	
	D95		-M3	WHT				-B17	
			-M4	BLK				-B18	
	D96		-N7	WHT				-B19	
		381	-N8	BLK				-B20	
	D97	380	-S1	WHT				-C9	
			-S2	BLK				-C10	
	D98		-S3	WHT				-C11	
			-S4	BLK				-C12	
	D99		-T1	WHT				-C17	
			-T2	BLK				-C18	
	D100		-T5	WHT				-C19	
		380	-T6	BLK				-C20	
	D101	381	-P5	WHT				-B11	
		381	-P6	BLK				-B12	
	D102	380	-V1	WHT				-A1	
			-V2	BLK				-A2	
	D103		-V3	WHT				-A3	
			-V4	BLK				-A4	
	D104		-V5	WHT				-A5	
			-V6	BLK				-A6	
	D105		-V7	WHT				-A7	
			-V8	BLK				-A8	
	D106		-W1	WHT				-A9	
			-W2	BLK				-A10	
	D107		-W3	WHT				-A11	
			-W4	BLK				-A12	
	D108		-W5	WHT				-A13	
			-W6	BLK				-A14	
	D109		-W7	WHT				-A15	
			-W8	BLK				-A16	
	D110		-X3	WHT				-C1	
			-X4	BLK				-C2	
	D111		-X5	WHT		2		-C3	
		380	-X6	BLK	24			-C4	
	D112	381	-P1	BLK	22	4		-A17	
	D113		-P2	WHT		5		-A18	
	D114		-P3					-A19	
	D115	381	-P4					-A20	
	D116	380	-T3					-B5	
	D117	380	J3-T4	WHT	22	5	382	P11-B6	
	D118	396	P9-A1	WHT	24	32	194	S1C-12	TWIST
	D119		-A2	BLK	24	33	208	S1D-12	
	D120		-A3	WHT	24	32	195	S1C-13	TWIST
	D121	396	P9-A4	BLK	24	33	209	S1D-13	
	D122	396	P9-A5	WHT	24	32	196	S1C-14	TWIST
	D123		-A6	BLK		33	210	S1D-14	
	D124		-A7	WHT		32	190	S1C-8	
	D125		-A8	BLK		33	206	S1D-8	
	D126		-A9	WHT		32	198	S1C-16	
	D127		-A10	BLK		33	212	S1D-16	
	D128		-A11	WHT		32	57	S3A ARM	
	D129		-A12	BLK		33	41	S3B-ARM	
	D130		-A13	WHT		32	25	S3C-ARM	
	D131		-A14	BLK		33	9	S3D-ARM	
	D132		-A15	WHT		32	5	S3CARM	
	D133		-A16	BLK		33	1	S3F-ARM	
	D134		-A17	WHT		32	197	S1C-15	
	D135		-A18	BLK		33	211	S1D-15	
	D136		-A19	WHT		32	8	S3E-20	
	D137		-A20	BLK		33	9	S3F-P0	
	D138		-B1	WHT		32	228	S1C-11	
	D139		-B2	BLK		33	209	S1F-11	
	D140		-B3	WHT		32	229	S1E-12	
	D141		-B4	BLK		33	250	S1F-12	
	D142		-B5	WHT		32	201	S1C-19	
	D143		-B6	BLK		33	215	S1D-19	
	D144		-B7	WHT		32	199	S1C-17	
	D145		-B8	BLK		33	213	S1D-17	
	D146		-B9	WHT		32	200	S1C-18	
	D147		-B10	BLK		33	214	S1D-18	
	D148		-B11	WHT		32	202	S1C-20	
	D149		-B12	BLK		33	216	S1D-20	
	D150		-B13	WHT		32	191	S1C-9	
	D151		-B14	BLK		33	205	S1D-9	
	D152		-B15	WHT		32	192	S1C-10	
	D153		-B16	BLK		33	206	S1D-10	
	D154		-B17	WHT		32	193	S1C-11	
	D155		-B18	BLK		33	207	S1D-11	
	D156		-B19	WHT		32	7	S3E-19	
	D157		-B20	BLK		33	3	S3F-19	
	D158		-C1	WHT		32	92	S2E-2	
	D159		-C2	BLK		33	75	S2F-2	
	D160		-C3	WHT		32	93	S2E-3	
	D161		-C4	BLK		33	76	S2F-3	
	D162		-C5	WHT		32	94	S2E-4	
	D163		-C6	BLK		33	77	S2F-4	
	D164		-C7	WHT		32	95	S2E-5	
	D165		-C8	BLK		33	78	S2F-5	
	D166		-C9	WHT		32	96	S2E-6	
	D167		-C10	BLK		33	79	S2F-6	
	D168		-C11	WHT		32	97	S2E-7	
	D169		-C12	BLK		33	80	S2F-7	
	D170		-C13	WHT		32	98	S2E-8	
	D171		-C14	BLK		33	81	S2F-8	
	D172		-C15	WHT		32	226	S1E-9	
	D173		-C16	BLK		33	247	S1F-9	
	D174		-C17	WHT		32	227	S1E-10	
	D175		-C18	BLK		33	248	S1F-10	
	D176		-C19	WHT		32	6	S3E-18	TWIST
	D177	396	P9-C20	BLK		33	2	S3F-18	
	D178	394	P10-A1	WHT		2	391	S21A-C	
			-A2	BLK			391	S21A-NO	
	D179		-A7	WHT		2	394	S26A-C	
			-A8	BLK			394	S24A-NO	
	D180		-A9	WHT	32		335	S17A-D-A	TWIST
	D181		-A10	BLK	33		337	S17A-P-A	
	D182		-A11	WHT		2	332	S17A-P-A	
			-A12	BLK			329	S17A-CA	
	D183		-A13	WHT			321	S17B-B1	
			-A14	BLK			319	S17B-C1	
	~~D184~~		~~-A15~~	~~WHT~~			~~336~~	~~S17B-A-A~~	
			~~-A16~~	~~BLK~~			~~318~~	~~S17B-A-A~~	
	D185		-A17	WHT			326	S17B-A1	
			-A18	BLK			323	S17B-D1	
	D186		-B1	WHT			357	S35A-C	
			-B2	BLK			357	S35A-NO	
	D187		-B3	WHT		2	358	S36A-C	
			-B4	BLK	24		358	S36A-NO	
	D188		-A3	WHT	22	5	308	S22A-C	
	D189		-A4				342	S22A-NO	
	D190		-A5				343	S23A-C	
	D191		-A6				343	S23A-NO	
	D192		-A9				383	S23A-NC	
	D193		-B5				404	S14-A	
	D194		-B6				264	S11A-NO	
	D195		-B7				404	S14-1	
	D196	394	P10-B8	WHT	22	5	261	S10A-NO	

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
O	RELEASED PER CCA #25514		
I	CHANGED PER CCA #25581 DR CHK APPD		
-	CLASS A CHANGED PER CCA #25582		
A	CHANGED PER CCA #25583 DR CHK APPD		
B	CHANGED PER CCA #25654 DR CHK APPD		
C	CHANGED PER CCA #25707 DR CHK APPD		
D	CHANGED PER CCA #25730 DR CHK APPD		
E	CHANGED PER CCA #25774 DR CHK APPD		
F	CHANGED PER CCA #25772 AND CLASS A RELEASED PER TDRR 26732		
G	CHANGED PER TDRR #26303 DR CHK APPD FPC		
H	CHANGED PER TDRR #26488 DR CHK APPD FPC		
J	CHANGED PER TDRR 26709 DR CHK APPD FPC		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX ±, .XXX ±, ANGLES °
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-197
DRAWN M. Gray DATE 28 JUL 65
CHECKED J. Yee 7 OCT 65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL A. G. METCALFE
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS, BRANCHED-D
X Y INTERFACE
COMPUTER TEST SET

SIZE J | CODE IDENT NO. 49956 | NASA DRAWING NO. 2014467
SCALE NONE | WT | SHEET 3 OF 4

INTERPret DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014467 J

ASSEMBLY INFORMATION CHART

REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO	TO STA NO.	TO DES	TO REMARKS
	D197	394	P10-B9	BLK	24	2	340	S20A-C	
			B10	WHT			340	S20A-NO	
	D198		B11	BLK			339	S9A-C	
			B12	WHT			339	S9A-NO	
	D199		B13	WHT			262	S1EA-C	
			B16	BLK			262	S1E8-C	
	D200		C1	BLK			322	S17B-B-A	
			C2	WHT			320	S17B-C-A	
	D2		C3	WHT			349	J10	
			C4	BLK			349	J10-GRD	
	D202		C5	WHT			350	J11	
			C6	BLK			350	J11-GRD	
	D203		C15	WHT			357	S34A-C	
			C16	BLK			357	S34A-NO	
	D204		C17	WHT		2	263	S13C-NO	
			C18	BLK	24		263	S13B-NO	
	D212		B13	WHT	22	5	404	S14-3	
	D206		A14				263	S13A-NO	
	D207		A17				262	S1EC-C	
	D208		B18				262	S1EC-NO	
	D209		B19				262	S1EC-NC	
	D210		C7				397	S23A-NO	
	D211		C8				398	S28A-NO	
	D212		C9				399	S29A-NO	
	D213		C10				397	S27A-C	
	D214		C11				400	S30A-NO	
	D215		C12				401	S31A-NO	
	D216		C13				402	S32A-NO	
	D217		C14				403	S33A-NO	
	D218	394	P10-C19	WHT	22	5	342	S28A-NC	
	D219	52	S2E-2	WHT	24	32	219	S1E-2	TWIST
	D220	75	S2F-2	BLK		33	220	S1F-2	
	D221	33	S2E-3	WHT		32	221	S1E-3	
	D222	76	S2F-3	BLK		33	241	S1F-3	
	D223	34	S2E-4	WHT		32	221	S1E-4	
	D224	77	S2F-4	BLK		33	242	S1F-4	
	D225	35	S2E-5	WHT		32	222	S1E-5	
	D226	78	S2F-5	BLK		33	243	S1F-5	
	D227	36	S2E-6	WHT		32	223	S1E-6	
	D228	79	S2F-6	BLK		33	244	S1F-6	
	D229	37	S2E-7	WHT		32	224	S1E-7	
	D230	80	S2F-7	BLK		33	245	S1F-7	
	D231	38	S2E-8	WHT		32	225	S1E-8	
	D232	81	S2F-8	BLK		33	246	S1F-8	
	D233	39	S2E-13	WHT		32	230	S1E-13	
	D234	82	S2F-13	BLK		33	251	S1F-13	
	D235	100	S2E-14	WHT		32	231	S1E-14	
	D236	83	S2F-14	BLK		33	252	S1F-14	
	D237	101	S2E-15	WHT		32	232	S1E-15	
	D238	84	S2F-15	BLK		33	253	S1F-15	
	D239	102	S2E-16	WHT		32	233	S1E-16	
	D240	85	S2F-16	BLK		33	254	S1F-16	
	D241	103	S2E-17	WHT		32	234	S1E-17	
	D242	86	S2F-17	BLK		33	255	S1F-17	
	D243	104	S2E-18	WHT		32	235	S1E-18	
	D244	87	S2F-18	BLK		33	256	S1F-18	
	D245	105	S2E-19	WHT		32	236	S1E-19	
	D246	88	S2F-19	BLK		33	257	S1F-19	
	D247	106	S2E-20	WHT		32	237	S1E-20	
	D248	89	S2F-20	BLK		33	258	S1F-20	
	D249	130	S1A-2	WHT		32	150	S1A-2	
	D250	110	S2B-2	BLK		33	170	S1B-2	
	D251	131	S2A-3	WHT		32	151	S1A-3	
	D252	111	S2B-3	BLK		33	171	S1B-3	
	D253	132	S2A-4	WHT		32	152	S1A-4	
	D254	112	S2B-4	BLK		33	172	S1B-4	
	D255	133	S2A-5	WHT		32	153	S1A-5	
	D256	113	S2B-5	BLK		33	173	S1B-5	
	D257	134	S2A-6	WHT		32	154	S1A-6	
	D258	114	S2B-6	BLK		33	174	S1B-6	
	D259	135	S2A-7	WHT		32	155	S1A-7	
	D260	115	S2B-7	BLK		33	175	S1B-7	
	D261	136	S2A-8	WHT		32	156	S1A-8	
	D262	116	S2B-8	BLK		33	176	S1B-8	
	D263	137	S2A-9	WHT		32	157	S1A-9	
	D264	117	S2B-9	BLK	24	33	177	S1B-9	TWIST
	D265	351	S1B-1	WHT	22	5	383	R1-ARM	
	D266	352	2				384	R2-ARM	
	D267	353	3				385	R3-ARM	
	D268	354	4				386	R4-ARM	
	D269	355	5				387	R5-ARM	
	D27	353	S1B-ARM				390	A2-40	
	D27	391	A2-14				74	S2F-1	
	D273	74	S2F-1				91	S2E-1	
	D274	91	S2E-1				218	S1E-1	
	D275	218	S1E-1	WHT	22	5	239	S1F-1	

ASSEMBLY INFORMATION CHART

REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO	TO STA NO.	TO DES	TO REMARKS
	D275	138	S2A-10	WHT	24	32	158	S1A-10	
	D276	118	S2B-10	BLK		33	178	S1B-10	TWIST
	D277	139	S2A-11	WHT		32	159	S1A-11	
	D278	119	S2B-11	BLK		33	179	S1B-11	
	D279	140	S2A-12	WHT		32	160	S1A-12	
	D280	120	S2B-12	BLK		33	180	S1B-12	
	D281	137	S2A-9	WHT		32	262	S1EA-NO	
	D282	117	S2B-9	BLK		33	262	S1E8-NO	
	D283	141	S3A-13	WHT		32	161	S1A-13	
	D284	121	S2B-13	BLK		33	181	S1B-13	
	D285	142	S2A-14	WHT		32	162	S1A-14	
	D286	122	S2B-14	BLK		33	182	S1B-14	
	D287	143	S2A-15	WHT		32	163	S1A-15	
	D288	123	S2B-15	BLK		33	183	S1B-15	
	D289	146	S2A-16	WHT		32	164	S1A-16	
	D290	124	S2B-16	BLK		33	184	S1B-16	
	D291	145	S2A-17	WHT		32	165	S1A-17	
	D292	125	S2B-17	BLK		33	185	S1B-17	
	D293	146	S2A-18	WHT		32	166	S1A-18	
	D294	126	S2B-18	BLK		33	186	S1B-18	
	D295	147	S2A-19	WHT		32	167	S1A-19	
	D296	127	S2B-19	BLK		33	187	S1B-19	
	D297	148	S2A-20	WHT		32	168	S1A-20	
	D298	128	S2B-20	BLK		33	188	S1B-20	
	D299	149	S1A-ARM	WHT		32	275	S4-A1	
	D300	169	S1B-ARM	BLK		33	276	S4-C1	
	D301	129	S2A-ARM	WHT		32	267	S7-A1	
	D302	109	S2B-ARM	BLK		33	270	S7-C1	
	D303	282	S4-A-A	WHT		32	334	S17A-D1	TWIST
	D304	277	S4-C-A	BLK		33	338	S17A-A1	
	D305	333	S17A-B3	WHT		2	259	S5B-C	
		330	S17A-C3	BLK			259	S5A-C	
	D306	260	S6A-C	WHT		2	294	S15A-A1	
		260	S6A-C	BLK			283	S15A-B1	
	D307	294	S15A-A1	WHT		32	317	S16A-A-A	TWIST
	D308	283	S15A-B1	BLK		33	305	S16B-A-A	
	D309	274	S7A-A	WHT		32	331	S17A-B1	TWIST
	D310	271	S7C-A	BLK		33	328	S17A-C1	
	D311	336	S17A-D3	WHT		2	265	S8B-C	
		327	S17A-A3	BLK			265	S8A-C	
	D312	266	S9B-C	WHT		32	288	S15A-B5	TWIST
	D313	266	S9A-C	BLK		33	284	S15A-B2	
	D314	293	S15A-A6	WHT		32	313	S16A-B-A	
	D315	284	S15A-B2	BLK		33	300	S16B-B-A	
	D316	318	S16A-A2	WHT		32	360	A3-8	
	D317	306	S16A-A2	BLK		33	360	7	
	D318	308	S16A-A3	WHT		32	364	16	
	D319	307	S16A-A3	BLK		33	364	15	
	D320	309	S16A-A4	WHT		32	368	24	
	D321	295	S16B-A4	BLK		33	368	23	
	D322	314	S16A-B2	WHT		32	362	12	
	D323	301	S16B-B2	BLK		33	362	11	
	D324	315	S16A-B3	WHT		32	366	20	
	D325	302	S16B-B3	BLK		33	366	A3-19	
	D326	316	S16A-C-A	WHT		32	289	S15A-B6	TWIST
	D327	303	S16A-C-A	BLK		33	285	S15A-B3	
	~~D328~~	~~293~~	~~S15A-A6~~	~~WHT~~		~~2~~	~~312~~	~~A3-23~~	
		~~293~~	~~S15A-A6~~	~~BLK~~			~~312~~	~~A3-23~~	
	~~D329~~	~~260~~	~~S16A-A2~~	~~WHT~~		~~2~~	~~322~~	~~15~~	
		~~260~~	~~S16A-A2~~	~~BLK~~			~~322~~	~~15~~	
	~~D330~~	~~263~~	~~S16A-A3~~	~~WHT~~		~~2~~	~~320~~	~~24~~	
		~~263~~	~~S16A-A3~~	~~BLK~~			~~320~~	~~24~~	
	~~D331~~	~~266~~	~~S16A-A6~~	~~WHT~~		~~2~~	~~321~~	~~23~~	
		~~266~~	~~S16A-A6~~	~~BLK~~			~~321~~	~~23~~	
	D332	266	S5D-NO	BLK	22	4	259	S5D-NO	
	D333	266	S9-3	WHT		5	259	S5-3	
	D334	266	S9D-NC				259	S5D-NC	
	D335	304	S16B-C4				348	J9-GRD	
	D336	373	A3-30				347	J8-GRD	
	D337	292	S15A-D-A	WHT	22	5	345	J8-GRD	
⚠	D338	⚠	E3	COAX		1	⚠	E4	⚠
			E3-SHLD	SHLD			⚠	E4-SHLD	SEE D392
⚠	D339		E4	WHT	22	5	361	A3-9	
⚠	D340		E3	WHT	22	5	310	S16A-D2	
⚠	D341		E5	COAX		1	⚠	E6	⚠
			E5-SHLD	SHLD			⚠	E6-SHLD	SEE D393
⚠	D342		E5	WHT	22	5	312	S16A-D3	
⚠	D343		E6	WHT	22	5	367	A3-21	
⚠	D344		E7	COAX		1	⚠	E22	⚠
			E7 SHLD	SHLD			⚠	E22-SHLD	SEE D390&394
⚠	D345		E7	WHT	22	5	311	S16A-D-A	
⚠	D346	⚠	E22	WHT	22	5	347	J8	

⚠ DENOTES EXTERNAL CONNECTION

~~⚠ STRIP .3, TIN .06~~
~~⚠ STRIP .44, TIN .06~~
~~⚠ STRIP .25, DO NOT TIN~~

ASSEMBLY INFORMATION CHART

REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO	TO STA NO.	TO DES	TO REMARKS
⚠	D347	⚠	E9	COAX		1	⚠	E10	⚠
			E9-SHLD	SHLD			⚠	E10-SHLD	SEE D395
⚠	D348		E9	WHT	22	5	296	S16B-D2	
⚠	D349		E10	WHT	22	5	363	A3-13	
⚠	D350		E11	COAX		1	⚠	E12	⚠
			E11-SHLD	SHLD			⚠	E12-SHLD	SEE D396
⚠	D351		E12	WHT	22	5	365	A3-17	
⚠	D352		E11	WHT	22	5	299	S16B-D3	
⚠	D353		E13	COAX		1	⚠	E14	⚠
			E13-SHLD	SHLD			⚠	E14-SHLD	SEE D397
⚠	D354		E14	WHT	22	5	369	A3-25	
⚠	D355		E12	WHT	22	5	299	S16B-D4	
⚠	D356		E15	COAX		1	⚠	E23	⚠
			E15-SHLD	SHLD			⚠	E23-SHLD	SEE D390
⚠	D357		E15	WHT	22	5	297	S16B-D-A	
⚠	D358		E23	WHT	22	5	348	J9	
⚠	D359		E21	COAX		1	⚠	E17	⚠
			E21-SHLD	SHLD			⚠	E17-SHLD	SEE D391&D396
⚠	D360		E21	WHT	22	5	291	S15A-A-A	
⚠	D361		E17	WHT	22	5	345	J6	
⚠	D362		E20	COAX		1	⚠	E19	⚠
			E20-SHLD	SHLD			⚠	E19-SHLD	SEE D391
⚠	D363		E20	WHT	22	5	286	S15A-B-A	
⚠	D364	⚠	E19	WHT	22	5	346	J7	
	D365	266	S9D-NO	WHT	24	2	264	S11D-NO	
		266	S9D-NC	BLK	24		264	S11D-NC	
	D366	389	A2-42	WHT	24	2	400	S30-1	
		389	A2-43	BLK	24		400	S30D-NO	
	D367	388	A2-48	WHT	22	5	383	AUX1-CW	
	~~D368~~	~~392~~	~~A2-18~~				~~400~~	~~S30-NC~~	
	D369	393	A2-2	WHT	22	5	290	S15B-B1	
	D370	393	A2-3	WHT	22	5	287	S15B-B4	
	D371	238	S1F-ARM	WHT	24	32	279	S4-C3	TWIST
	D372	217	S1E-ARM	BLK		33	280	S4-A3	
	D373	90	S2E-ARM	WHT		32	272	S7-A3	
	D374	73	S2F-ARM	BLK		33	268	S7-C3	
	D375	203	S1D-ARM	WHT		32	278	S4-C2	
	D376	189	S1C-ARM	BLK		33	281	S4-A2	
	D377	107	S2D-ARM	WHT		32	269	S7-C2	
	D378	108	S2C-ARM	BLK		33	273	S7-A2	
	D379	203	S13D-NO	WHT		32	344	S24D-NO	
	D380	203	S13D-NC	BLK		33	359	S34D-NC	
	D381	263	S13D-NO	WHT		32	359	S34D-NO	
	D382	263	S13D-NC	BLK	24	33	344	S24D-NC	TWIST
	D383	266	S9-1	WHT	22	5	264	S11-1	
	D384	289	S15A-B6	WHT	22	3	381	J13-K8	
		285	S15A-B3	BLK	22		381	J13-L8	
		⚠	E1	SHLD			⚠	E2	
	D385	⚠	E2	BLK	22	4	381	J13-J8	
	D386	⚠	E1	BLK	22	4	287	S15B-B3	
	D387	344	S24-3	WHT	22	5	264	S13-1	
	D388	147	S2A-19	WHT	24	32	263	S13B-C	TWIST
	D389	127	S2B-19	BLK	24	33	263	S13C-C	
⚠	D390	⚠	E22-SHLD	BLK	22	4	⚠	E23-SHLD	⚠
	D391		E17-SHLD				⚠	E19-SHLD	⚠
	D392		E4-SHLD				360	A3-6	
	D393		E6-SHLD				366	A3-18	
	D394		E22-SHLD				362	J8-GRD	
	D395		E10-SHLD				363	A3-10	
	D396		E12-SHLD				365	A3-14	
	D397		E14-SHLD				369	A3-22	
	D398	⚠	E17-SHLD	BLK	22	4	345	J6-GRD	
	D399	394	P10-A15	WHT	24	32	325	S7B-A-A	
	D400	394	P10-A16	BLK		33	324	S7B-D-A	TWIST
	D401	259	S5A-NO	WHT		32	372	A3-28	
	D402	259	S5B-NO	BLK		33	376	-38	TWIST
	D403	260	S6A-NO	WHT		32	373	-29	
	D404	260	S6B-NO	BLK		33	377	-39	TWIST
	D405	265	S8A-NO	WHT		32	370	-26	
	D406	265	S8B-NO	BLK		33	374	-36	TWIST
	D407	266	S9A-NO	WHT		32	371	-27	
	D408	266	S9B-NO	BLK	24	33	375	A3-37	TWIST

SYM	REVISIONS DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R25378	4/24/64	RTC
I	CHANGED PER CCA R25391 DR# CHK'D APPD	4/24/64	RTC
-	CLASS B CHANGED PER CCA R25393 DR# CHK'D APPD	4/24/64	RTC
A	CHANGED PER CCA R25393 DR# CHK'D APPD	4/24/64	RTC
B	CHANGED PER CCA R25454 DR# CHK'D APPD	5/4/64	RTC
C	CHANGED PER CCA R25707 DR# CHK'D APPD	5/14/64	RTC
D	CHANGED PER CCA R25730 DR# CHK'D APPD	5/14/64	RTC
E	CHANGED PER CCA R25771 DR# CHK'D APPD	5/14/64	RTC
F	CHANGED PER CCA R25772 & 73 CLASS A RELEASED PER TDRR 26472	5/26/64	RTC
G	CHANGED PER TDRR 26808 DR CHK'D APPD	6/2/64	RTC
H	CHANGED PER TDRR 26488 DR# CHK'D APPD	7/1/64	RTC
J	CHANGED PER TDRR 26709 DR# CHK'D APPD	8/4/64	RTC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		LIST OF MATERIALS	

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

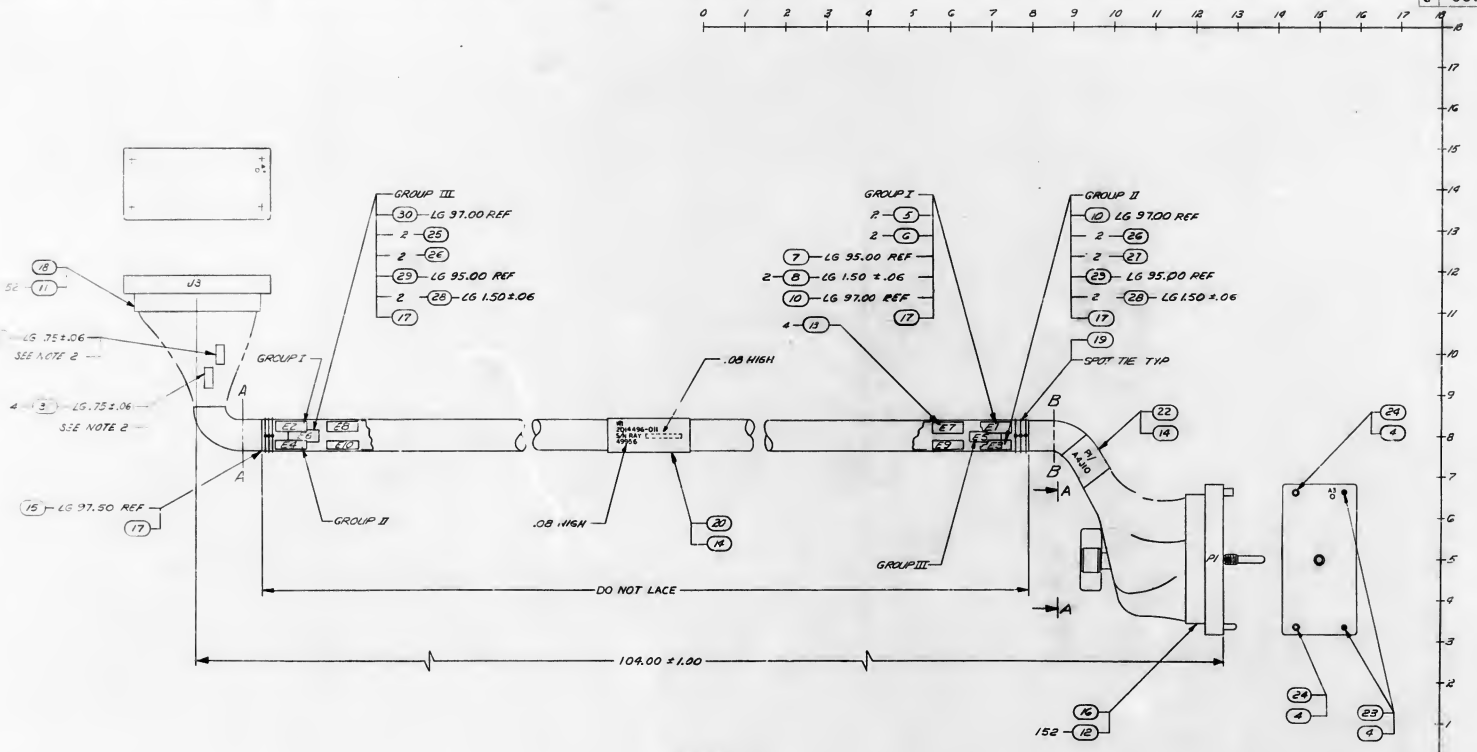
WIRING HARNESS, BRANCHED-D
X Y INTERFACE
COMPUTER TEST SET

SIZE J | CODE IDENT NO. 49956 | NASA DRAWING NO. 2014467
SCALE NONE | WT. | SHEET 4 OF 4

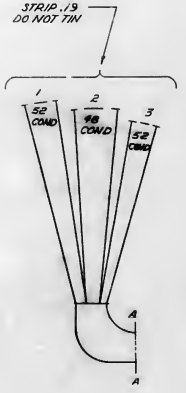
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .X ±.1 .XX ±.03 .XXX ±.010 ANGLES ±1°
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

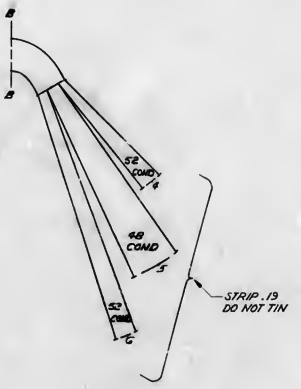
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA R-35202	3/4/70	[illegible]
1	CHANGE PER CCA R35452 DR W. Kelly CHK'D Smith APP'D	7/1/70	A.P.A.
-	CLASS B CHANGED PER CCA R35503	7/1/70	A.P.A.
A	CHANGED PER CCA R35603 & CLASS A RELEASED PER TDRR 25-72	7/1/70	[illegible]
3	CHANGED PER TDRR 26966 DR [illegible] CHK'D [illegible] APP'D	4/11/72	[illegible]



NOTES
1. FABRICATE PER ND1002032 EXCEPT USE FIND NO.19
2. MARK CONDUCTOR IDENTIFICATION PER ND1002019
3. LACE ENTIRE HARNESS CONFIGURATION UNLESS OTHERWISE SPECIFIED
4. CRIMP PER ND1002206
5. SERIALIZE PER ND1002023
6. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 10006256-001
~~7. SEE FIND NO.13 USING FIND NO.12~~
~~8. ROUND FIND NO. 20 USING FIND NO.14~~
9. MARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH SUBASSEMBLY DESIGNATION
10. MIL-I-23053 CLASS 1, COLOR BLK, ID .750 FOR FIND NO. 28 ID 1.000 FOR FIND NO. 8
11. QQ-B-575 FOR FIND NO.10 BRAID SIZE .50 AWG 34, FOR FIND NO. 30 BRAID SIZE .375 AWG 34
12. AR DENOTES AS REQUIRED
13. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
14. MIL-I-23053 CLASS 1, COLOR WHT, ID .125 FOR FIND 21, ID .187 FOR FIND 31
15. MIL-W-16878/4 E22 WHT BRAID JACKET TFE WHT
~~16. THIS SYMBOL Δ SHOWN ON ASSEMBLY & FORMATION CHART DENOTES INTERNAL CONNECTIONS.~~
17. STRIP ALL LEADS .50 ± .06 & TIN PER ND1002071 UNLESS OTHERWISE SPECIFIED
18. CUT SLEEVING LENGTH AS SHOWN
19. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327



VIEW A-A



* INDICATES LENGTH IN FEET

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
-011		LIST OF MATERIALS	
* -3	SEE NOTE 14	SLEEVING, INSUL SHRINK	31
* 8.3	SEE NOTE 11	SHIELD, BRAID	30
* 16.0	10006396-4	SLEEVING, INSULATION	29
* 0.5	SEE NOTE 10	SLEEVING, INSULATION	28
2	1000243-36	FERRULE, INNER	27
4	1000242-33	FERRULE, OUTER	26
2	1000243-37	FERRULE, INNER	25
2	10006172-006	GUIDE SOCKET	24
2	10006172-002	GUIDE PIN	23
1	10006415-065	BAND, MARKER, CABLE	22
* 2.8	SEE NOTE 19	SLEEVING, INSUL. SHRINK	21
1	10006415-141	BAND, MARKER, CABLE	20
AR	10006538-006	TAPE, LACING	19
1	10006271-001	CONNECTOR, RECEPTACLE	18
AR	10006299	SOLVENT	17
1	10006272-001	CONNECTOR, PLUG	16
* 8.3	10006396-9	SLEEVING, INSULATION	15
AR	10006259	ADHESIVE	14
8	10006402-1	SLEEVE, SOLDER	13
152	10006491-011	CONTACT, ELECT. MALE, CRIMP	12
152	10006491-012	CONTACT, ELECT. FEMALE CRIMP	11
* 16.2	SEE NOTE 11	SHIELD, BRAID	10
* GC	MIL-W-16878/4 E22	WIRE, ELECT BLK	9
* 0.3	SEE NOTE 10	SLEEVING, INSUL. SHRINK	8
* 8.0	10006396-5	SLEEVING, INSULATION	7
2	1000242-35	FERRULE, OUTER	6
2	1000243-38	FERRULE, INNER	5
4	10006172-005	NUT, STOP	4
* 19.0	SEE NOTE 15	WIRE, ELEC. TFE PR. BLK/WHT SHLD	3
* 47.0	10F931-11	WIRE, ELEC. TFE AT BLK/WHT	2
* 9K0	MIL-W-16878/4 E22	WIRE, ELECTRICAL, WHT	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .03 DECIMALS .005 ANGLES ±30'	RAYTHEON CO. LEXINGTON, MASS. CONTRACT NO. NAS 9-497	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN [illegible] DATE 8-19-69	CHECKED [illegible] DATE 8-20-69	CABLE ASSEMBLY W1 OPERATION CONSOLE	
APPROVAL [illegible] DATE 8-20-69	APPROVAL [illegible] DATE 8-20-69		
2014028 NEXT ASSY USED ON APPLICATION	MATERIAL	NASA APPROVAL [illegible] DATE 8-20-69	CODE IDENT NO. 80249 956 J NASA DRAWING NO. 2014496
		MFT APPROVAL [illegible] DATE 8-20-69	SCALE 1/1 WT SHEET 1 OF 3
		MFT APPROVAL [illegible] DATE 8-20-69	

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
0	RELEASED PER CCA A35222	3/9/65	
1	CHANGE PER CCA R25413 DR W. Yelle CHK J. Ward APPD [illegible]	4/1/65	[illegible]
–	CLASS B CHANGED PER CCA 925309	4/29/65	[illegible]
A	CHANGED PER CCA R25668 CL 13 A RELEASED PER TDRR 25476	5/11/65	[illegible]
B	CHANGED PER TDRR 26446 DR [illegible] CHK [illegible] APPD	5/21/65	[illegible]

ASSEMBLY INFORMATION CHART

FROM				DESCRIPTION				TO			
REMARKS	COND IDENT	STA NO	DES	COLOR	AWG	FIND NO	STA NO	DES	REMARKS
	A1	3	J3-A3	WHT	22	2	4	P1-A3	
			A4	BLK				A4	
	A2		A5	WHT				A5	
			A6	BLK				A6	
	A3		B1	WHT				B1	
			B2	BLK				B2	
	A4		B3	WHT				B3	
			B4	BLK				B4	
	A5		B5	WHT				B5	
			B6	BLK				B6	
	A6		B7	WHT				B7	
			B8	BLK				B8	
	A7		C1	WHT				C1	
			C2	BLK				C2	
	A8		C3	WHT				C3	
			C4	BLK	22	2		C4	
	A9		C5	WHT	22	1		C5	
	A10		C6	WHT	22	2		C6	
			C7	BLK				C7	
	A11		C8	WHT				C8	
			D8	BLK				D8	
	A12		D2	WHT				D2	
			D3	BLK				D3	
	A13		D4	WHT				D4	
			D5	BLK				D5	
	A14		D6	WHT				D6	
			D7	BLK				D7	
	A15		D1	WHT				D1	
			E1	BLK				E1	
	A16		E2	WHT				E2	
			E3	BLK				E3	
	A17		E4	WHT		2		E4	
			E5	BLK	22			E5	
	A18		E6	WHT	22	1		E6	
GROUP I	A19		E7	WHT	22	2		E7	
			E8	BLK				E8	
	A20		F1	WHT				F1	
			F2	BLK				F2	
	A21		F3	WHT				F3	
			F4	BLK				F4	
	A22		F5	WHT				F5	
			F6	BLK				F6	
	A23		F7	WHT				F7	
			F8	BLK				F8	
	A24		G1	WHT				G1	
			G2	BLK				G2	
	A25		G3	WHT				G3	
			G4	BLK				G4	
	A26		J5	WHT		2		G5	
			J6	BLK	22			G6	
	A27		G7	WHT	22	1		G7	
	A28	3	G8	WHT	22	2	4	G8	
		2	H8	BLK			5	H8	
	A29		J1	WHT				H1	
			H2	BLK				H2	
	A30		H3	WHT				H3	
			H4	BLK				H4	
	A31		H5	WHT				H5	
			H6	BLK				H6	
	A32		H7	WHT		2		H7	
		2	J8	BLK	22		5	J8	
	A33	1	S6	WHT	22	1	6	S6	
	A34	1	S8	WHT	22	1	6	S8	
	A35	2	J3	WHT	22	2	5	J3	
			J4	BLK	22			J4	
	A36		J5	WHT	22	1		J5	
	A37	2	J3 J6	WHT	22	1	5	P1-J6	
	A38	⚠	E2	SHLD			⚠	E1	
	A39	2	J3-J7	BLK	22	9	⚠	E2	
		⚠	E1	BLK	22	9	5	P1-J7	
	A40	1	J3-X3	WHT	22	2	6	P1-X3	
			X4	BLK				X4	
	A41		X5	WHT				X5	
			X6	BLK				X6	
	A42		W1	WHT				W1	
			W2	BLK				W2	
GROUP II	A43		W3	WHT				W3	
			W4	BLK				W4	
	A44		W5	WHT				W5	
			W6	BLK				W6	
	A45		W7	WHT				W7	
			W8	BLK				W8	
	A46		V3	WHT		2		V3	
			V4	BLK	22			V4	
	A47	1	J3-J5	WHT	22	1	6	P1-V5	

ASSEMBLY INFORMATION CHART

FROM				DESCRIPTION				TO			
REMARKS	COND IDENT	STA NO	DES	COLOR	AWG	FIND NO	STA NO	DES	REMARKS
	A48	1	J3-V6	WHT	22	2	6	P1-V6	
			V7	BLK				V7	
	A49		V8	WHT				V8	
			U8	BLK				U8	
	A50		U1	WHT				U1	
			U2	BLK	22	2		U2	
	A51		U7	WHT	22	1		U7	
	A52		T1	WHT	22	1		T1	
GROUP II	A53		T4	WHT	22	2		T4	
			T3	BLK				T5	
	A54		T6	WHT	22	1		T6	
	A55		T8					T8	
	A56		U5					U3	
	A57		U4					U4	
	A58		U5					U5	
	A59		U6					U6	
	A60		R7					R7	
	A61		V1					V1	
	A62	1	J3-V2	WHT	22	1	6	P1-V2	
		⚠	E4	SHLD			⚠	E3	
	A63	1	J3-T7	BLK	22	9	⚠	E4	
	A64	⚠	E3	BLK	22	9	6	P1-T7	
	A65	2	J3-K7	WHT	22	3	5	P1-K7	
		2	J3-L7	BLK	22		5	P1-L7	
		⚠	E8	SHLD			⚠	E7	
	A66	2	J3-K6	BLK	22	9	⚠	E8	
	A67	⚠	E7	BLK	22	9	5	P1-K6	
	A68	2	J3-M7	WHT	22	3	5	P1-M7	
		2	J3-N7	BLK	22		5	P1-N7	
		⚠	E10	SHLD			⚠	E9	
	A69	2	J3-M6	BLK	22	9	⚠	E10	
	A70	⚠	E9	BLK	22	9	5	P1-M6	
	A71	2	J3-P1	WHT	22	1	5	P1-P1	
	A72		P2					P2	
	A73		P3					P3	
	A74		P4					P4	
	A75		P5					P5	
	A76		P6	WHT	22	1		P6	
	A77		P7	WHT	22	2		P7	
		2	P8	BLK			5	P8	
	A78	1	S1	WHT	22	1	6	S1	
	A79		S2					S2	
	A80		S3					S3	
	A81		S4					S4	
	A82		S5					S5	
	A83	1	S7				6	S7	
	A84	2	J1				5	J1	
	A85		J2					J2	
	A86		K1					K1	
	A87		K2					K2	
	A88		K3	WHT	22	1		K3	
GROUP III	A89		K8	WHT	22	2		K8	
			L8	BLK				L8	
	A90		L1	WHT	22	1		L1	
	A91		L2					L2	
	A92		M1					M1	
	A93		M2					M2	
	A94		M3	WHT	22	1		M3	
	A95		M8	WHT	22	2		M8	
			N8	BLK				N8	
	A96		N1	WHT	22	1		N1	
	A97		N2					N2	
	A98		N3					N3	
	A99		N4					N4	
	A100		N5					N5	
	A101	2	N6				5	N6	
	A102	1	R1				6	R1	
	A103		R2					R2	
	A104		R3					R3	
	A105		R4					R4	
	A106		R5					R5	
	A107		R6					R6	
	A109		T2					T2	
	A110	1	J3-T3	WHT	22	1	6	P1-T3	
		⚠	E6	SHLD			⚠	E5	
	A111	1	J3-R8	BLK	22	9	⚠	E6	
	A112	⚠	E5	BLK	22	9	6	P1-R8	

⚠ DENOTES INTERNAL CONNECTION

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-457
DRAWN [illegible] DATE 8/10/64
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY
W1
OPERATION CONSOLE

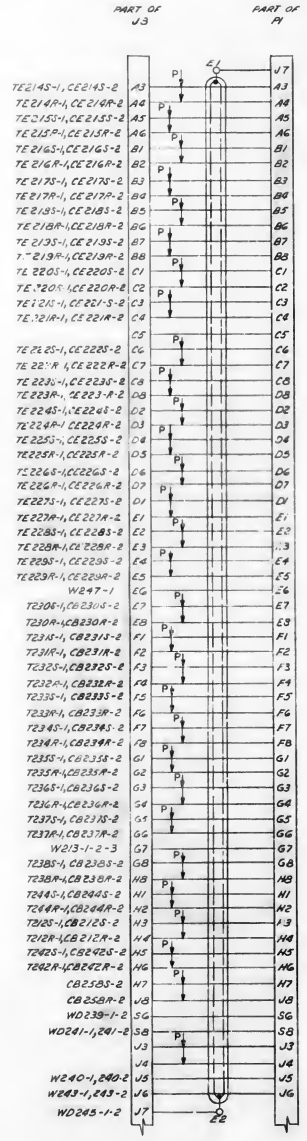
CODE IDENT NO. 49956 | SIZE J | NASA DRAWING NO. 2014496

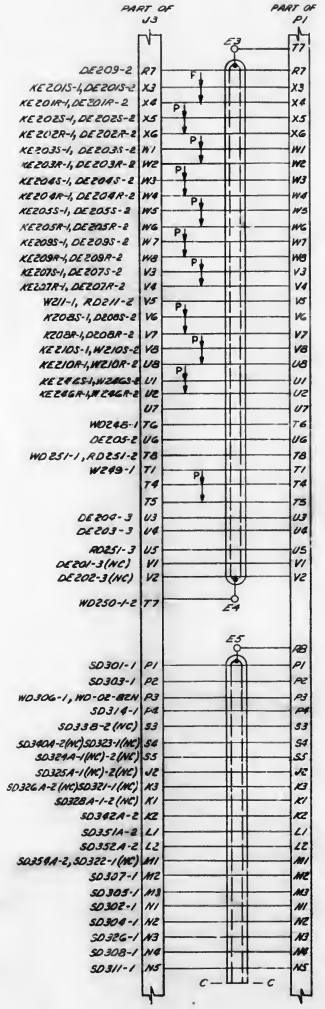
SCALE NONE | WT | SHEET 2 OF 3

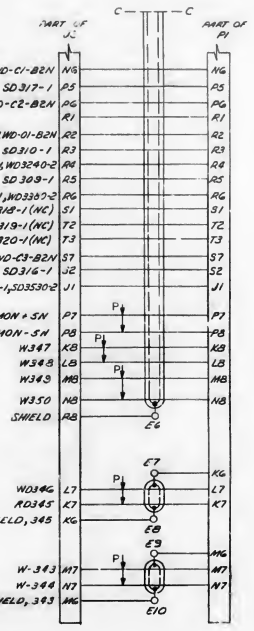
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX ± .01, DECIMALS .XXX ± .005, ANGLES ± 1°
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

2014496 B

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
C	RELEASED PER CCA A25222	9/16/66	[illegible]
B	CHANGE PER CCA A25452 DR U KILL CHARTER APPD 10/4/66	10/4/66	[illegible]
-	CLASS B CHANGED PER CCA A25503	10/26/66	[illegible]
A	CHANGED PER CCA A24668 CLASS A RELEASED PER TDR# 25472	11/1/66	[illegible]
B	CHANGED PER TDR# 25466 DR 66 Lee CK [illegible] 2332	11/16/66	[illegible]







QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIG. NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .X ± .03 .XX ± .01 .XXX ± .005 ANGLES ± 30' DO NOT SCALE DRAWING MATERIAL	RAYTHEON LEXINGTON, MASS. CONTRACT NO. NAS 9-97	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
NEXT ASSY USED ON APPLICATION	DRAWN [illegible] DATE 3/4/66 CHECKED [illegible] APPROVAL [illegible] APPROVAL [illegible] APPROVAL [illegible] R-SA APPROVAL [illegible] MFT APPROVAL [illegible] QUALITY APPROVAL [illegible]	CABLE ASSEMBLY W1 OPERATION CONSOLE	
		CTR IDENT NO. 49956 SIZE J	RAYTHEON DRAWING NO. 2014496
		DO NOT SCALE DWG	SHEET 3 OF 3

2014496 B

2014496 B

2014498 Δ

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
Q	RELEASED PER CCA A03492P7		
R	CLASS B CHANGED PER CCA R2509		
S	CHANGED PER ECAR E8249 AND CLASS A RELEASED PER TORP 23476		

ASSEMBLY INFORMATION CHART

REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO.	TO STA NO.	TO DES	REMARKS
	A1	4	P1-64	WHT	20	2	23	P3-48	
	A2		-60					-45	
	A3		-57					-57	
	A4		-54					-54	
	A5		-51		20	2	23	P3-51	
	A6		-BC		16	4	27	A2PS1-3	
	A7		-79				24	A2PS1-7	
	A8		-72				12	A4PS1-4	
	A9		-73				13	A4PS1-6	
	A10		-74				14	A2PS1-7	
	A11		-67				11	A4PS1-3	
	A12		-70				21	P5-7-3	
	A13	4	P1-76				23	P3-76	
	A14	19	P5-7-7				23	P3-75	
	A15	22	P5-1	WHT		4	29	PG-2	TWIST
	A16	22	P5-1-6	BLK		5	29	PG-H	
	A17	4	P1-12				29	PG-E	
	A18	4	P1-4				29	PG-C	
	A19	19	PG-5				23	P3-44	
	A20	19	PG-A				23	P3-82	
	A21	6	P4-L				29	PG-G	
	A22	4	P1-C	BLK	16	5	29	PG-D	
	A23	1	-71	WHT	20	2	23	P3-71	TWIST
	A24		-70	BLK		3		-70	
	A25		-59	WHT		2		-59	
	A26		-58	BLK		3		-58	
	A27		-56	WHT		2		-56	
	A28		-55	BLK		3		-55	
	A29	1	-49	WHT		2		-49	
	A30	4	P1-50	BLK		3	23	P3-50	
	A31	3	P2-1	WHT		2	15	P5-1	
	A32	1	-4	BLK		3	15	-4	
	A33		-16	WHT		2	15	-16	
	A34		-23	BLK		3	15	-23	
	A35		-55	WHT		2	17	-55	
	A36		-32	BLK		3	16	-32	
	A37		-33	WHT		2		-33	
	A38		-36	BLK		3		-36	
	A39		-31	WHT		2		-31	
	A40		-38	BLK		3		-38	
	A41		-37	WHT		2		-37	
	A42		-40	BLK		3		-40	
	A43		-45	WHT		2		-45	
	A44		-46	BLK		3		-46	
	A45		-53	WHT		2		-53	
	A46		-52	BLK		3	16	-52	
	A47	1	-24	WHT		2	15	-24	
	A48	3	P2-30	BLK		3	15	P5-30	
	A49	6	P4-E	WHT		2	23	P3-46	
	A50	6	P4-C	BLK		3	23	P3-47	
	A51	6	P4-G	WHT		2	23	P3-79	
	A52	6	P4-11	BLK	20	3	23	P3-80	
	A53	6	P4-C	WHT	20	2	8	E3	Δ
	A54	6	P4-D	BLK	20	3	7	E4	Δ
	A55	4	P1-G3	WHT	16	4	23	P3-G3	
	A56		-62	BLK		5	23	P3-62	
	A57		-53	WHT		4	23	P3-53	
	A58		-52	BLK		5	23	P3-52	
	A59		-77	WHT		4	25	#2PS1-Q	
	A60	4	P1-78	BLK		5	26	#2PS1-4	
	A61	3	P2-2	WHT		4	15	P5-2	
	A62	1	-3	BLK		5	1	-3	
	A63		-7	WHT		4		-7	
	A64		-11	BLK		5		-11	
	A65		-5	WHT		4		-5	
	A66		-8	BLK		5		-8	
	A67		-13	WHT		4		-13	
	A68		-12	BLK		5		-12	
	A69		-14	WHT		4		-14	
	A70		-17	BLK		5		-17	
	A71		-10	WHT		4		-10	
	A72		-21	BLK		5		-21	
	A73		-15	WHT		4		-15	
	A74		-18	BLK		5		-18	
	A75		-25	WHT		4		-25	
	A76		-22	BLK		5	15	-22	
	A77	1	-49	WHT		4	16	-49	TWIST
	A78	3	P2-50	BLK	16	5	16	P5-50	

ASSEMBLY INFORMATION CHART

REMARKS	FROM COND IDENT	FROM STA NO.	FROM DES	DESCRIPTION COLOR	DESCRIPTION AWG	DESCRIPTION FIND NO.	TO STA NO.	TO DES	REMARKS
	A79	3	P2-43	WHT	16	4	16	P5-43	TWIST
	A80		-44	BLK		5		-44	
	A81		-47	WHT		4		-47	
	A82		-48	BLK		5		-48	
	A83		-51	WHT		4		-51	
	A84	3	P2-54	BLK		5	16	P5-54	
Δ	A85	6	P4-M	WHT		4	23	P3-72	
Δ	A86	6	P4-K	BLK		5		-67	
	A87	20	P5-1-6	WHT		4		-73	
	A88	20	P5-1-G	BLK		5		-74	
	A89	20	P5-1-4	WHT		4		-78	
	A90	20	P5-1-6	BLK	16	5	23	P3-77	
	A91	6	P1-66	WHT	16	4	23	P3-66	TWIST
	A92	4	P1-65	BLK	16	5	23	P3-65	
	A93	4	P1-3	WHT	22	7	23	P3-3	
		4	P1-2	BLK	22		23	P3-2	
		Δ	E32	SHLD			Δ	E33	
	A94	4	P1-1	BLK	22	1	Δ	E32	Δ
Δ	A95	Δ	E33	BLK	22	1	23	P3-1	
	A96	3	P2-39	WHT	22	7	16	P5-39	
		3	P2-41	BLK	22		16	P5-41	
		Δ	E6	SHLD			Δ	E7	
	A97	3	P2-42	BLK	22	1	Δ	E6	Δ
Δ	A98	Δ	E7	BLK	22	1	16	P5-42	
	A99	3	P2-G3	WHT	22	7	17	P5-G3	
		3	P2-G4	BLK	22		17	P5-64	
		Δ	E8	SHLD			Δ	E9	
	A100	3	P2-G2	BLK	22	1	Δ	E8	Δ
Δ	A101	Δ	E9	BLK	22	1	17	P5-G2	
	A102	3	P2-G7	WHT	22	7	17	P5-G7	
		3	P2-G6	BLK	22		17	P5-G6	
		Δ	E10	SHLD			Δ	E11	
	A103	3	P2-G5	BLK	22	1	Δ	E10	Δ
Δ	A104	Δ	E11	BLK	22	1	17	P5-G5	
	A105	3	P2-78	WHT	22	7	17	P5-78	
		3	P2-77	BLK	22		17	P5-77	
		Δ	E12	SHLD			Δ	E13	
	A106	3	P2-76	BLK	22	1	Δ	E12	Δ
Δ	A107	Δ	E13	BLK	22	1	17	P5-76	
	A108	3	P2-80	WHT	22	7	17	P5-80	
		3	P2-82	BLK	22		17	P5-82	
		Δ	E14	SHLD			Δ	E15	
	A109	3	P2-79	BLK	22	1	Δ	E14	Δ
Δ	A110	Δ	E15	BLK	22	1	17	P5-79	
	A111	4	P1-10	WHT	20	8	29	PG-T	Δ
		4	P1-11	BLK	20		29	PG-S	Δ
		Δ	E30	SHLD			Δ	E21	
	A112	6	P4-A	WHT	20	8	29	PG-N	Δ
		6	P4-B	BLK	20		29	PG-Y	Δ
		Δ	E23	SHLD			Δ	E16	
Δ	A113	1	E2	WHT	16	9	5	B1-A	Δ
Δ		2	C1-1	BLK	16		5	B1-B	Δ
		Δ	E27	SHLD			Δ	E28	
Δ	A114	29	PG-X	WHT	16	9	28	A2PS1-7	
Δ		29	PG-S	BLK	16		28	A2PS1-2	
		Δ	E17	SHLD			Δ	E24	
Δ	A115	29	PG-N	WHT	16	9	9	A4PS1-1	
Δ		29	PG-J	BLK	16		10	A4PS1-2	
		Δ	E18	SHLD			Δ	E25	
Δ	A116	29	PG-R	WHT	16	9	1	E2	Δ
Δ		29	PG-V	BLK	16		2	C1-1	Δ
		Δ	E19	SHLD			Δ	#22	
Δ	A117	29	PG-T	Δ	16	10	18	#3-A	
Δ		29	PG-L	BLK	16		18	#3-B	
Δ		29	PG-M	Δ	16		18	#3-C	
		Δ	E20	SHLD			Δ	E23	
	A118	4	P1-13	Δ	20	11	29	PG-B	Δ
		4	P1-14	BLK	20		29	PG-A	Δ
		4	P1-15	Δ	20		29	PG-U	Δ
		Δ	E31	SHLD			Δ	E22	
Δ	A119	Δ	E16	BLK	22	1	Δ	E17	Δ
Δ	A120	Δ	E17				Δ	E18	
Δ	A121	Δ	E18				Δ	E19	
Δ	A122	Δ	E19				Δ	E20	
Δ	A123	Δ	E20				Δ	E21	
Δ	A124	Δ	E21				Δ	E22	Δ
Δ	A125	Δ	E22				29	PG-A	Δ
Δ	A126	Δ	E26	BLK	22	1		E27	Δ

Δ DENOTES INTERNAL CONNECTION
Δ DENOTES WHT/RED/GY
Δ DENOTES WHT/BLK/GY
Δ STRIP .25 DO NOT TIN
Δ STRIP .31 & TIN
Δ STRIP .44 & TIN
Δ STRIP .50 & TIN

NOTES
1. FABRICATE PER ND1002032 EXCEPT USE FIND 22
2. MARK CONDUCTOR IDENTIFICATION PER ND1002019
3. CRIMP PER ND1002206
4. SERIALIZE PER ND1002023
5. MARK NORMAL GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1002255-001
6. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN ; FOR COMPLETE DESIGNATION PREFIX WITH SUB-ASSEMBLY DESIGNATIONS
7. AR DENOTES AS REQUIRED
8. STRIP ALL LEADS .19, DO NOT TIN UNLESS OTHERWISE SPECIFIED
9. LACE ENTIRE HARNESS CONFIGURATION UNLESS OTHERWISE SPECIFIED
10. NUMBERS ENCLOSED IN PARENTHESES INDICATE NUMBER OF CONDUCTORS
11. MIL-W-16878/4 E22, 2 COND TWISTED, WHT & BLK, SHLD'D, JACKET TFE WHITE
12. MIL-W-16878/4 E20, 2 COND TWISTED, WHT & BLK, SHLD'D, JACKET TFE WHITE
13. MIL-W-16878/4 E16, 2 COND TWISTED, WHT & BLK, SHLD'D, JACKET TFE WHITE
14. MIL-W-16878/4 E16, 3 COND TWISTED, BLK, WHT/RED/GY, WHT/BLK/GY, SHLD'D, JACKET TFE WHITE
15. MIL-W-16878/4 E20, 3 COND TWISTED, BLK, WHT/RED/GY, WHT/BLK/GY, SHLD'D, JACKET TFE WHITE
16. NUMBERS PRECEDING BALLOON DENOTE QUANTITY
17. TIN PER ND1002071
18. CUT SLEEVING LENGTHS AS SHOWN
19. SOLDER PER ND1002071
20. MIL-I-23053 CLASS I COLOR WHT ID .187 FOR FIND 38, ID .250 FOR FIND 39

* DENOTES LENGTH IN FEET

	2014499	INTERCONNECTION DIAGRAM	REF
**	0.8	SEE NOTE 20	SLEEVING, INSULATION	39
**	.3	SEE NOTE 20	SLEEVING, INSULATION	38
	23	MS25036-6	TERMINAL, LUG	37
	1	MS39057-9	BUSHING, SLEEVE	36
	1	MS39056-4	BUSHING, SLEEVE	35
	1	1002615-054	BAND, MARKER	34
	2	1002615-058	BAND, MARKER	33
	AR	1002253	ADHESIVE	32
	1	1002615-056	BAND, MARKER	31
	28	1010402-3	SLEEVE, SOLDER	30
*	E4	1002G396-G	INSULATION, SLEEVING	29
**	3.0	1002G396-3	INSULATION, SLEEVING	28
**	5.0	1002G396-5	INSULATION, SLEEVING	27
**	32	1002G396-7	INSULATION, SLEEVING	26
**	G.0	1002G396-8	INSULATION, SLEEVING	25
	1	MS39057-8	BUSHING, SLEEVE	24
	1	1002615-138	BAND, MARKER	23
	AR	1002458-004	TAPE, LACING	22
	3	1002615-059	BAND, MARKER	21
	39	1002691-012	CONTACT, ELECTRICAL	20
	1	MS39057-7	BUSHING, SLEEVE	19
	62	1002691-013	CONTACT, ELECTRICAL	18
	33	1002691-011	CONTACT, ELECTRICAL	17
	#6	1002691-014	CONTACT, ELECTRICAL	16
	1	MS3106R-36-9P	CONNECTOR, PLUG	15
	1	MS3126F-14-12S	CONNECTOR, PLUG	14
	4	1002490-002	CONNECTOR, PLUG	13
	AR	1002699	SOLVENT	12
**	12.0	SEE NOTE 15	WIRE ELEC	11
**	6.0	SEE NOTE 14	WIRE ELEC	10
**	18.0	SEE NOTE 13	WIRE ELEC	9
**	2.0	SEE NOTE 12	WIRE ELEC	8
**	40.0	SEE NOTE 11	WIRE ELEC	7
	1	MS39056-9	BUSHING, SLEEVE	6
*	4.0	MIL-W-16878/4 E16	WIRE ELEC, BLK	5
*	1.40	MIL-W-16878/4 E16	WIRE ELEC, WHT	4
*	7.0	MIL-W-16878/4 E20	WIRE ELEC, BLK	3
*	7.0	MIL-W-16878/4 E20	WIRE ELEC, WHT	2
*	4.5	MIL-W-16878/4 E22	WIRE ELEC, BLK	1
	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

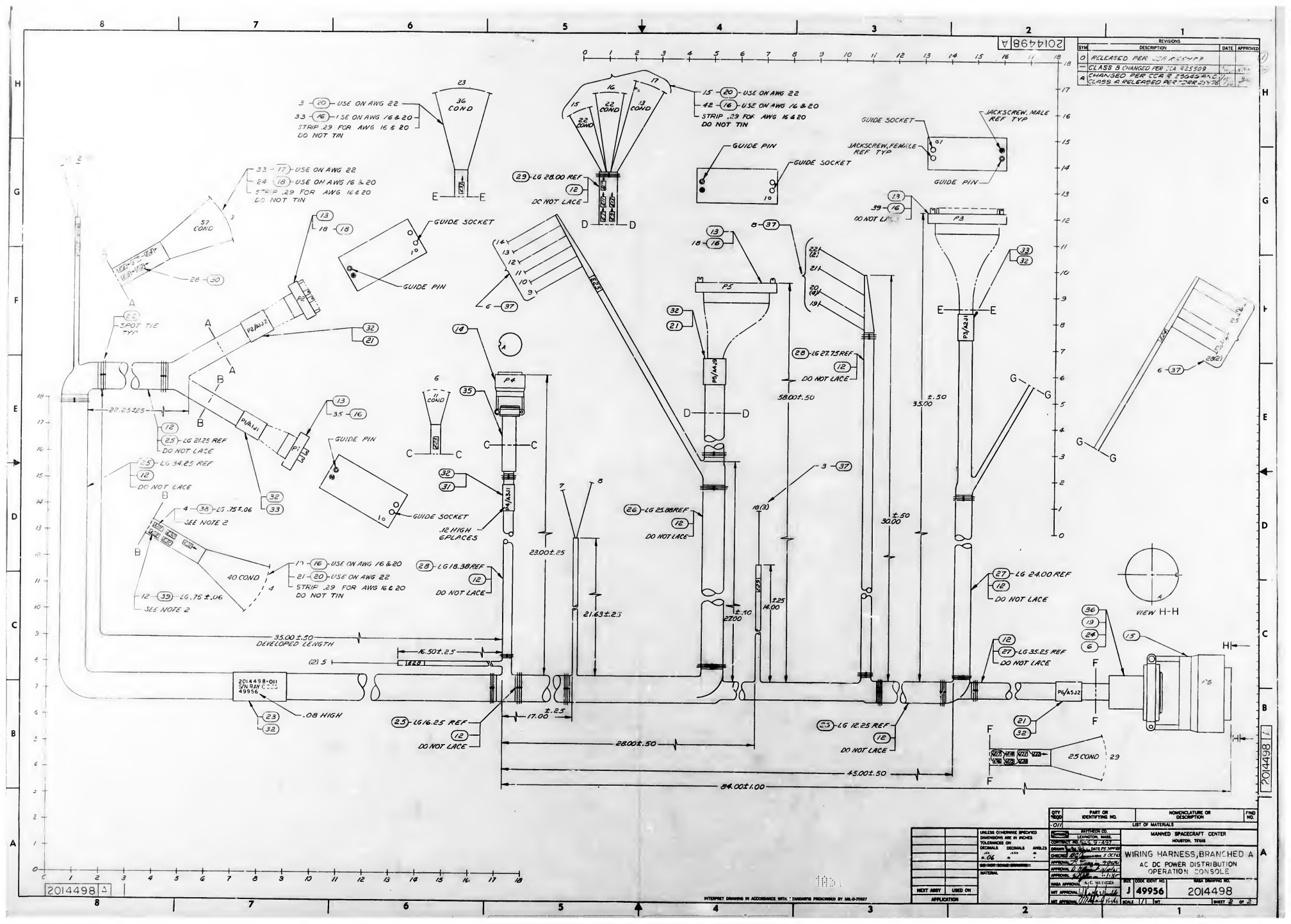
LIST OF MATERIALS

RAYTHEON CO. LEXINGTON, MASS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
CONTRACT NAS 9-1200			
DRAWN	DATE 5 OCT 65	WIRING HARNESS, BRANCHED A AC DC POWER DISTRIBUTION OPERATION CONSOLE	
CHECKED	DATE 5 OCT 65		
APPROVAL			
APPROVAL			
APPROVAL			
RMA APPROVAL	A. C. MATHIES		
MFG APPROVAL		SIZE J	CODE IDENT NO. 49956
QUALITY APPROVAL		SCALE NONE	WEIGHT
			SHEET 1 OF 2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX ±.05, .XXX ±, ANGLES °
MATERIAL
2014026 NEXT ASSY USED ON APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2014498 Δ


2014498 A
REVISIONS
SYM | DESCRIPTION | DATE | APPROVED
0 RELEASED PER ECA R23503
— CLASS B CHANGED PER ECA R23509
A CHANGED PER ECA R 23645 AND CLASS A RELEASED PER ECA R23676
3 (20) USE ON AWG 22
33 (16) USE ON AWG 16 & 20
STRIP .29 FOR AWG 16 & 20
DO NOT TIN
23 36 COND
15 (20) USE ON AWG 22
42 (16) USE ON AWG 16 & 20
STRIP .29 FOR AWG 16 & 20
DO NOT TIN
16 22 COND
17 13 COND
15 22 COND
GUIDE SOCKET
GUIDE PIN
JACKSCREW, MALE REF TYP
JACKSCREW, FEMALE REF TYP
33 (17) USE ON AWG 22
24 (18) USE ON AWG 16 & 20
STRIP .29 FOR AWG 16 & 20
DO NOT TIN
57 COND
28 (30)
(29) LG 28.00 REF
(12) DO NOT LACE
13 (18) (18)
GUIDE SOCKET
GUIDE PIN
14 13 12 11 10 9
6 (37)
13 (18) (16)
8 (37)
22 (2) 21 20 (4) 19
P5
P3
39 (16)
DO NOT LACE
32 (21)
P5/A5J1
(28) LG 27.75 REF
(12) DO NOT LACE
58.00±.50
35.00 ±.50
33 (32)
P3/A3J1
E E
G G
6 (37)
20(2)
22.25±.25
P2/A3J2
P1/A1J1
P2
(22) SPOT TIE TYP
(32) (21)
(12) (25) LG 21.25 REF
DO NOT LACE
(25) LG 34.25 REF
(12) DO NOT LACE
13 (16) 35
GUIDE PIN
GUIDE SOCKET
.12 HIGH 6 PLACES
6 11 COND
(35) P4
(32) (31) P4/A3J1
A A
B B
C C
D D
4 (38) LG .75±.06
SEE NOTE 2
B B
40 COND
4
12 (39) LG .75±.06
SEE NOTE 2
17 (16) USE ON AWG 16 & 20
21 (20) USE ON AWG 22
STRIP .29 FOR AWG 16 & 20
DO NOT TIN
(28) LG 18.38 REF
(12) DO NOT LACE
23.00±.25
21.63±.25
(26) LG 25.88 REF
(12) DO NOT LACE
3 (37)
18 (3)
±.50 30.00
±.25 14.00
±.50 27.00
(27) LG 24.00 REF
(12) DO NOT LACE
VIEW H-H
(36) (19) (24) (6)
(15)
(12) (27) LG 35.25 REF
DO NOT LACE
35.00±.50 DEVELOPED LENGTH
16.50±.25
(2) 5
2014498-011 S/N RAY C--- 49956
.08 HIGH
(23) (32)
(23) LG 16.25 REF
(12) DO NOT LACE
17.00 ±.25
(23) LG 12.25 REF
(12) DO NOT LACE
28.00±.50
45.00±.50
54.00±1.00
P6/A5J2
(21) (32)
25 COND 29
F F
H H
A B
QTY REQD | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION | FIND NO.
-011 | LIST OF MATERIALS
RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-537
DRAWN DATE 25 SEPT
CHECKED
APPROVED
APPROVED
APPROVED
NASA APPROVAL A.C. MFG/DES
MIT APPROVAL
MIT APPROVAL
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX .XXX ANGLES ±.06 ± °
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
WIRING HARNESS, BRANCHED A
AC DC POWER DISTRIBUTION OPERATION CONSOLE
SIZE J | CODE IDENT NO. 49956 | NASA DRAWING NO. 2014498
SCALE 1/1 | WT. | SHEET 2 OF 2
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2014498 A
2014498 A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.
2. THIS DRAWING DEFINES TOTAL G & N SYSTEMS IN TERMS OF IDENTIFIABLE, SEPARATELY INSTALLED, PIECES OR SEPARATE PARTS.
3. OUTSTANDING ECP'S ARE THOSE THAT HAVE BEEN APPROVED, BUT NOT INCORPORATED, PART NUMBERS REFLECT CONFIGURATION CHANGES AS A RESULT OF INCORPORATED ECP'S.
4. PARTS REMOVED FROM FIND NUMBERS 2, 18, 21, 26, 32, 50 AND 104 FOR SHIPPING AND/OR INSTALLATION ARE LISTED IN TABLE I.
5.
6. CLAMP SIZES SELECTED TO CONFORM TO BUNDLE DIAMETERS.
7. (*) D NOTES THERMOCOUPLE ASSEMBLY.
8. ITEMS REQUIRED FOR VIBRATION MONITORING.
9. NO DOCUMENTATION AVAILABLE. ENGINEERING MODELS ARE PRESENTLY BEING SUPPLIED BUT WILL BE REPLACED IN THE NEAR FUTURE.
10. K - START TAPE ASSEMBLY FOR USE AT NAA. USE REVISION INDICATED.
11. K - START TAPE ASSEMBLY FOR USE AT KSC. USE REVISION INDICATED.
12. K - START TAPE ASSEMBLY FOR USE AT MSC. USE REVISION INDICATED.
13. UNIVERSAL DSKY'S WILL EVENTUALLY REPLACE THE AGC DSKY ASSY FOR ALL MANNED FLIGHT SYSTEMS.
14. THE PART(S) AND/OR ASSEMBLIE(S) LISTED IN COLUMN "B" OF TABLE II FORM THE ASSEMBLY LISTED IN COLUMN "A".
15. THE PART(S) LISTED IN COLUMN "B" OF TABLE III ARE SOLD-OFF AS A PART OF THE ASSEMBLY LISTED IN COLUMN "A".
16. FIND NUMBER 4 IS TO BE REPLACED WITH FIND NO. 10 PRIOR TO FLIGHT.
17. THE PARTS LISTED IN COLUMN "B" OF TABLE IV ARE TO BE REMOVED FROM THE ASSEMBLY LISTED IN COLUMN "A" PRIOR TO S/C INSTALLATION. THE PARTS REMOVED ARE TO BE RETAINED WITH THE G & N SYSTEM FOR REUSE IN THE EVENT OF REMOVAL OF FIND NO. 16 OR 100 FROM THE S/C.
18. REFERENCE DRAWINGS:
    - 1021200 MASTER RETROFIT KIT LIST - APOLLO G & N (AC)
    - 8106025 G & N MASTER RETROFIT KIT LIST (KIC)
    - 8104001 G & N MASTER RETROFIT KIT LIST - COMPUTER SUB-SYSTEM (RAY)
19. THE PARTS LISTED IN TABLE V FORMS FIND NO. 35 FOR G & N 202 ONLY.
20. FIND NO'S. 23 & 24 ARE TO BE INSTALLED ON FIND NO. 32 PRIOR TO FLIGHT.
21. FIND NO. 2J IS TO BE INSTALLED ON FIND NO. 18 PRIOR TO FLIGHT.
22. CROSS REFERENCE BETWEEN ECP'S PLANNED FOR RETROFIT AND PART NUMBER CHANGES OR ADDITIONS IS PROVIDED IN ABLE VI ECP'S OUTSTANDING FOR G & N 207 ARE NOT INCLUDED IN THIS TABLE.

FIND NO.	NOMENCLATURE OR DESCRIPTION	PART NO	QTY
100	THUMBSCREW, PROTECTIVE	2899996-002	5
	THUMBSCREW, PROTECTIVE	2899996-001	2
	THUMBSCREW, PROTECTIVE	2899995	4
16	CAP, PROTECTIVE	2018816	4
COLUMN "A"	COLUMN "B"		

TABLE II (SEE NOTE 14)

FIND NO.	NOMENCLATURE OR DESCRIPTION	ITEMS REMOVED FOR SHIPPING AND/OR INSTALLATION
18		19, 20
104	OPTICAL UNIT ASSY (G & N 201, 202, 203, & 204 ONLY)	105 THRU 109
50	G & N INTERCONNECT HARNESS GP (C/M BL II)	51 THRU 70
32	G & N INDICATOR CONTROL PANEL ASSY	33
26	PSA	27 THRU 30
21	CDU	22
2	APOLLO GUIDANCE COMPUTER	3

TABLE I (SEE NOTE 4)

COLUMN "A"	COLUMN "B"
FIND NO. 18	FIND NO. 19, 20
FIND NO. 32	FIND NO. 33
FIND NO. 26	FIND NO.'S 27 THRU 30
FIND NO. 21	FIND NO. 22
FIND NO. 2	FIND NO. 3

TABLE III (SEE NOTE 15)

FIND NO.	NOMENCLATURE OR DESCRIPTION	PART NUMBER	QTY
	ADHESIVE, EPOXY	AR	1008903
	DUST COVER RETAINER	2	1021258-021
	DUST COVER RETAINER	2	1021258-011
	SCREW	2	1021339-003
	SCREW	1	1021339-002
	SCREW	4	1021339-001
	WASHER	4	1021341-002
	WASHER	7	1021341-001
	INSULATOR	7	1021324
	SCREW, SLOTTED, SPECIAL	4	1021326
	FILLET, PROTECTOR, SCT COVER	1	1021338
	CROWN HALF, UPPER, SXT COVER	2	1021320
	CROWN HALF, LOWER, SCT COVER	1	1021337
	CROWN HALF, LOWER, SXT COVER	1	1021329

TABLE V (SEE NOTE 19)

FIND NO.	FROM	TO	FIND NO.
1038	2012775	2012775-011	108
1038	2012793-011	2012793-021	107
1040	2007200-161	2007200-181	26
1040	2007200-151	2007200-171	26
1030	2007222-231	2007222-281	21
1030	2007222-181	2007222-271	21
1017	2007203-111	2007203-121	15
1017	2018601-231	2018601-251	16
1013	2010790-181	2010790-191	103
1007	2012791-011	2012791-021	106
796	2007200-151	2007200-161	26
815	2003993-031	2003993-071	2
815	2003993-041	2003993-081	2
815	2003993-051	2003993-091	2
815	2003993-061	2003993-111	2
792	2021290-041	2021290-051	32
796	2012795-000	2012795-011	107
795	2012700-011	2012700-021	109
790	2021382-021	2021382-031	18
768	2003994-051	2003994-121	7
768	2003994-041	2003994-111	7
754	REFER TO DWG 2021469		
753	2012791-000	2012791-011	106
752	----------	2012616-000	47
752	----------	2012808-000	46
735	2003994-021	2003994-051	7
725	2021290-021	2021290-041	32
724	2010790-131	2010790-181	103
706	2012748-000	2012748-011	110
706	2012707-000	2012700-011	109
702	----------	2012797-021	102
702	----------	2012796-021	101
688	2007203-101	2007203-111	15
688	2018601-201	2018601-231	16
653	2010747-051	2010747-071	14
653	2018699-031	2018699-051	16
632	2021255-011	2021382-021	18
632	2012699-000	2012791-000	106
632	2012667-000	2012775-000	108
632	2012691-000	2012790-000	105
632	2012719-000	2012793-000	107
630	2899982-011	2899982-031	100
629	2014576-011	2021394-011	34
628	2021255-011	2021382-011	18
627	2014567-051	2014567-061	50
623	2007234-011	2007234-021	12
621	2007200-121	2007200-141	26
603,609	2007222-161	2007222-181	21
572	2007200-141	2007200-151	26
569	2014578-031	2021290-011	32
536	2014578-021	2014578-031	32
474	2003100-021	2003100-081	2
359	2899350-011	2899950-031	73

ECP NO.	PART NUMBER CHANGE FROM	PART NUMBER CHANGE TO	FIND NO.

TABLE VI (SEE NOTE 22)

					MS21042-3
					MS16996-10
					1005783-11
					2014499
					2014601
					2014767
2012748-011	2012748-011	2012748-000	2012748-011	2012774-011	2012748-0
2012700-011	2012700-011	2012700-100	2012700-011	2012700-021	2012700-0
2012775-000	2012775-000	2012667-000	2012775-000	2012775-011	2012775-0
2012793-000	2012793-000	2012719-000	2012793-000	2012793-011	2012793-0
2012791-001	2012791-000	2012699-000	2012791-011	2012791-021	2012791-0
2012790-011	2012790-011	2012691-000	2012790-011	2012790-021	2012790-0
2010790-131	2010790-131	2010790-091	2010790-131	2010790-191	2010790-1
2012797-021	2012797-021	----	2012797-021	2012797-021	2012797-0
2012796-021	2012796-021	----	2012796-021	2012796-021	2012796-0
2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-0
NAS674V19	NAS674V19	NAS674V19	NAS674V19	NAS674V19	NAS674V19
2021204	2021204	2021204	2021204	2021204	2021204
1899971	1899971	1899971	1899971	1899971	1899971
1899997-001 & -002	1899997-001 & -002	1899997-001 & -002	1899997-001 & -002	1899997-001 & -002	1899997-0
2899991	2899991	2899991	2899991	2899991	2899991
2899984-001	2899984-001	2899984-001	2899984-001	2899984-001	2899984-0
2899979	2899979	2899979	2899979	2899979	2899979
2899977-001	2899977-001	2899977-001	2899977-001	2899977-001	2899977-0
1010728-3	1010728-3	1010728-3	1010728-3	1010728-3	1010728-3
1899967-001	1899967-001	1899967-001	1899967-001	1899967-001	1899967-0
1010727-1	1010727-1	1010727-1	1010727-1	1010727-1	1010727-1
AM960C616L(1897006-063)	AM960C616L(1897006-063)	AM960C616L(1897006-063)	AM960C616L(1897006-063)	AM960C616L(1897006-063)	AM960C616
AM960C516L(1897006-053)	AM960C516L(1897006-052)	AM960C516L(1897006-053)	AM960C516L(1897006-053)	AM960C516L(1897006-053)	AM960C516
1010727-3	1010727-3	1010727-3	1010727-3	1010727-3	1010727-3
2899988-011	2899988-011	2899988-011	2899988-011	2899988-011	2899988-0
2899987-011	2899987-011	2899987-011	2899987-011	2899987-011	2899987-0
2899986-011	2899986-011	2899986-011	2899986-011	2899986-01	2899986-0
2899950-021	2899950-021	2899950-021	2899950-021	2899950-021	2899950-0
MS21045-C3	MS21045-C3	MS21045-C3	MS21045-C3	MS21045-C3	MS21045-C3
MS16995-25	MS16995-25	MS16995-25	MS16995-25	NAS1352C08-5	MS16995-2
MS16996-10	MS16996-10	MS16996-10	MS16996-10	MS16996-10	MS16996-1
MS16996-9	MS16996-9	MS16996-9	MS16996-9	MS16996-9	MS16996-9
1006783-27	1006783-27	1006783-27	1006783-27	1006783-27	1006783-27
1010705-7 THRU -18	1010705-7 THRU -18	1010705-7 THRU -18	1010705-7 THRU -18	1010705-7 THRU -18	1010705-7
1010705-3 OR -4	1010705-3 OR -4	1010705-3 OR -4	1010705-3 OR -4	1010705-3 OR -4	1010705-3
1010400-105 THRU -109	1010400-105 THRU -109	1010400-105 THRU -109	1010400-105 THRU -109	1010400-105 THRU -10	1010400-1
1010400-1 THRU -7	1010400-1 THRU -7	1010400-1 THRU -7	1010400-1 THRU -7	1010400-1 THRU -7	1010400-1
1010349-4 THRU -6 OR 1010400-105 THRU -109	1010349-4 THRU -6 OR 1010400-105 THRU -109	1010349-4 THRU -6 OR 1010400-105 THRU -109	1010349-4 THRU -6 OR 1010400-105 THRU -109	1010349-4 THRU -6 OR 1010400-105 THRU -109	1010349-4
1008807-3 THRU -5	1008807-3 THRU -5	1008807-3 THRU -5	1008807-3 THRU -5	1008807-3 THRU -5	1008807-3
2014731	2014731	2014731	2014731	2014731	2014731
2021315	2021319	2021250	2021319	2021319	2021319
2021318	2021316	2021279	2021318	2021318	2021318
2021317	2021317	2021278	2021317	2021317	2021317
2021316	2021316	2021277	2021316	2021316	2021316
2021315	2021315	2021276	2021315	2021315	2021315
2021314	2021314	2021275	2021314	2021314	2021314
2021313	2021313	2021274	2021313	2021313	2021313
2021312	2021312	2010774	2021406	2021406	2021312
2014567-061	2014567-061	2014567-041	2014567-071	2014567-071	2014567-0
2018821-021	2018821-021	2018821-011	2018821-021	2018821-021	2018821-0
2012816-000	2012816-000	----	2012816-000	2012816-000	----
2012808-000	2012808-000	----	2012808-000	2012808-000	----
1021362-011	1021362-011	----	1021362-011	1021362-011	1021362-0
1021352-011	1021352-011	----	1021352-011	1021352-011	1021352-0
1008493	1008493	----	1008493	1008493	1008493
1008488-000	1008488-000	----	1008488-000	1008488-000	1008488
1008487-003	1008487-003	----	1008487-003	1008487-003	1008487
1008487-002	1008487-002	----	1008487-002	1008487-002	1008487
1008487-001	1008487-001	----	1008487-001	1008487-001	1008487
1008486	1008486	----	1008486	1008486	1008486
2021376-021	2021376-021	----	2021376-021	2021376-021	2021376
2021377-021	2021377-021	----	2021377-021	2021377-021	2021377
2021375-051	2021375-051	----	2021375-051	2021375-051	2021375
2021394-011	2021394-011	2014576-011	2021394-011	2021394-011	2021394
2021301-011	2021301-011	2014764-011	2021301-011	2021301-011	2014764
2021290-041	2021290-041	2014578-021	2021290-051	2021290-051	2021290
2021479-011	----	2021479-011	----	----	----
2021379-002	2021379-002	2010784-011	2021379-002	2021379-002	2021379
2021379-001	2021379-001	2010784-010	2021379-001	2021379-001	2021379
2021378-003	2021378-003	2010784-009	2021378-003	2021378-003	2021378
2021378-002	2021378-002	2010784-008	2021378-002	2021378-002	2021378
2007200-151	2007200-151	2007200-111	2007200-151	2007200-161	2007200
2021495	2021472	----	2021495	----	2021495
2021473	2021473	----	2021473	----	2021473
2021486	2021474	----	2021499	----	2021486
2010784-015	2010784-013	2010784-013	2010784-013	2010784-015	2010784
2007222-241	2007222-231	2007222-111	2007222-181	2007222-281	2007222
AN960C10L(1897006-019)	AN960C10L(1897006-019)	----	AN960C10L(1897006-019)	AN960C10L(1897006-019)	AN960C10
MS16996-10	MS16996-10	1001488-45	MS16996-10	MS16996-10	MS16996
2021382-021	2021382-021	2021255-011	2021382-021	2021382-031	2021382
2007201-031	2007201-031	2007201-021	2007201-031	2007201-031	2007201
2018601-231	2018601-201	2018601-081	2018601-231	2018601-251	2018601
2007203-111	2007203-101	2007203-051	2007203-111	2007203-121	2007203
2007234-021	2007234-021	2007234-011	2007234-021	2007234-021	2007234
2021484	----	----	2021484	----	----
2003972-45,641,671,681,811,711	2003972-51-521-535-545-571	----	2003972-781-941-851-821-951-841	----	2021106
2004199-011	2004199-011	2004199-011	2004199-011	2004199-011	2004199
2003994-051	2003994-031	2003994-011 (1)	2003994-121	2003994-121	2003994
2021485	----	----	2021488	----	----
2021487	----	----	2021487	----	----
----	2021104-041	----	----	2021104-051	----
1006380	1006380	1006380	1006380	1006380	1006380
2003993-031	2003993-031	2003200-031	2003993-041	2003993-111	2003993
2013250-011	----	----	----	----	----
OUTSTANDING ECP'S PLANNED FOR RETROFIT CONFIGURATION DASH NO.		538,569,572,585,587,590, 603,605,609,620,621,623, 627,628,629,653, 678 688,702,706,632		754	
G & N SYSTEMS	-091	-081	-071	-061	-051
SPACECRAFT ALLOCATION	209	208	207	206	205
	106	103	AC HOUSE SYS.	106	116

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		MS21043-04					11	4	NUT, SELF LOCKING	SEE NOTE 8	56	116
		MS15795-704					11	4	WASHER, FLAT	SEE NOTE 8	56	115
		10C5783-19					11	4	SCREW, BUTTON HD.	SEE NOTE 8	56	114
		2014799					11	1	BRACKET, CONNECTOR	SEE NOTE 8	56	113
		2014801					11	1	AMPLIFIER, PLATE ASSY	SEE NOTE 8	56	112
		2014767					11	1	WIRING HARNESS "K"	SEE NOTE 8	56	111
2012748-011	2012748-011	2012748-011	1011787-000			KSC		1	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	110
2012700-021	2012700-021	2012700-021	2012700-000	2012700-000			111	1	SXT EYEPIECE ASSY		65	109
2012775-011	2012775-011	2012775-011	2012775-000	2012667-000			111	1	SCT PRISM HOUSING ASSY		65	108
2012793-000	2012793-021	2012793-000	2012793-000	2012719-000			111	1	SCT EYEPIECE ASSY		65	107
2012791-011	2012791-021	2012791-000	2012771-000	2012639-000			111	1	SXT MIRROR HOUSING ASSY		65	106
2012790-011	2012790-011	2012790-000	2012790-000	—		KSC		1	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	105
	—	—	—	2011000-033			11	1	OPTICAL UNIT ASSY	SEE NOTE 4	65	104
2010790-131	2010790-191	2010790-171	2010790-171	—			11	1	OPTICAL UNIT & BELLOWS ASSY	SEE NOTE 4	65	103
2012797-021	2012797-021	2012797-021	—	—		X		1	SCT DUST COVER		05	102
2012796-021	2012796-021	2012796-021	—	—		X		1	SXT DUST COVER		05	101
2899982-031	2899982-031	2899982-041	2899982-031	2899982-011			111	1	NAV BASE ASSY	SEE NOTE 17	64	100
NAS674V19	NAS674V19	NAS674V19	NAS674V19	—			111	4	BOLT, HEX CAP	SEE NOTE 14	63	99
2021204	2021204	2021204	2021204	—			111	2	BUSHING, SLEEVING-IMU MOUNT	SEE NOTE 14	63	98
1899971	1899971	1899971	1899971	—			111	6	SPRING-SEAL RETAINING	SEE NOTE 14	63	97
1899997-001 & -002	1899997-001 & -002	1899997-001 & -002	1899997-001 & -002	—			11	1	SEAL, PLAIN ENCASED	SEE NOTE 14	63	96
—	—	—	—	M524671-8			11	8	SCREW, CAP-SOCKET HEAD, FLAT	SEE NOTE 14	63	95
2899991	2899991	2899991	2899991	2899991			11	3	WASHER, SHOULDERED & RECESSED	SEE NOTE 14	63	94
—	—	—	—	1010915-1 & -2			11	2	PACKING, PREFORMED, RETAINED	SEE NOTE 14	63	93
—	—	—	—	1899936-001 & -002			11	2	SEAL-PLAIN ENCASED	SEE NOTE 14	63	92
—	—	—	—	AN960C10L(1897006-019)			11	24	WASHER, FLAT	SEE NOTE 14	63	91
—	—	—	—	AN363C1032(1896990-011)			11	24	NUT, SELF-LOCKING	SEE NOTE 14	63	90
—	—	—	—	2898951-011			11	1	OPTICS TO SPACECRAFT SEAL ASSY (SXT)	SEE NOTE 14	63	89
—	—	—	—	2898950-011			11	1	OPTICS TO SPACECRAFT SEAL ASSY (SCT)	SEE NOTE 14	63	88
—	—	—	—	NAS674V18			111	2	BOLT, HEX CAP	SEE NOTE 14	63	87
—	—	—	—	2899992			111	2	BOLT, IMU MOUNT	SEE NOTE 14	63	86
2899984-001	2899984-001	2899984-001	2899984-001	2899984-001			11	3	COLLAR, CENTERING	SEE NOTE 14	63	85
2899979	2899979	2899979	2899979	2899979			11	6	WASHER-SPRING TENSION	SEE NOTE 14	63	84
2899977-001	2899977-001	2899977-001	2899977-001	2899977-001			11	3	WASHER, FLAT, LUBRICATED	SEE NOTE 14	63	83
1010728-3	1010728-3	1010728-3	1010728-3	1010728-3			11	3	BOLT, EXTERNAL WRENCHING	SEE NOTE 14	63	82
1899967-001	1899967-001	1899967-001	1899967-001	1899967-001			11	3	BALL, PRECISION	SEE NOTE 14	63	81
1010727-1	1010727-1	1010727-1	1010727-1	1010727-1			11	4	BOLT, INTERNAL WRENCHING	SEE NOTE 14	63	80
AN960C616L(1897006-063)	AN960C616L(1897006-063)	AN960C616L(1897006-063)	AN960C616L(1897006-063)	AN960C616L(1897006-063)			11	4	WASHER, FLAT	SEE NOTE 14	63	79
AN960C516L(1897006-053)	AN960C516L(1897006-053)	AN960C516L(1897006-053)	AN960C516L(1897006-053)	AN960C516L(1897006-053)			11	2	WASHER, FLAT	SEE NOTE 14	63	78
1010727-3	1010727-3	1010727-3	1010727-3	1010727-3			11	2	BOLT, INTERNAL WRENCHING	SEE NOTE 14	63	77
2899988-011	2899988-011	2899988-011	2899988-011	2899988-011			11	1	MOUNTING ASSY, PLANE	SEE NOTE 14	63	76
2899987-011	2899987-011	2899987-011	2899987-011	2899987-011			11	1	MOUNTING ASSY, LINE	SEE NOTE 14	63	75
2899986-011	2899986-011	2899986-011	2899986-011	2899986-011			11	1	MOUNTING ASSY, FIXED	SEE NOTE 14	63	74
2899950-021	2899950-021	2899950-021	2899950-021	2899950-011					NAV BASE, OPT UNIT & BELLOWS INST KIT		63	73
												72
												71
MS21045-C3	MS21045-C3	MS21045-C3	MS21045-C3	MS21045-C3			111	1	NUT, SELF LOCKING	SEE NOTE 14	56	70
MS16995-25	NAS1352C08-5	MS16995-25	MS16995-25	MS16995-25			11	2	SCREW, SOC HD	SEE NOTE 14	56	69
MS16996-10	MS16996-10	MS16996-10	MS16996-10	MS16996-10			111	1	SCREW, SOC HD	SEE NOTE 14	56	68
MS16996-9	MS16996-9	MS16996-9	MS16996-9	MS16996-9			11	3	SCREW, SOC HD	SEE NOTE 14	56	67
1006783-27	1006783-27	1006783-27	1006783-27	1006783-27			11	2	SCREW, BUTTON HEAD	SEE NOTE 14	56	66
1010705-7 THRU -15	1010705-7 THRU -15	1010705-7 THRU -15	1010705-7 THRU -15	1010705-7 THRU -15			1-111, 8-11	7	CLAMP	SEE NOTES 6 & 14	56	65
1010705-3 OR -4	1010705-3 OR -4	1010705-3 OR -4	1010705-3 OR -4	1010705-3 OR -4			11	1	CLAMP	SEE NOTES 6 & 14	56	64
1010400-105 THRU -110	1010400-105 THRU -110	1010400-105 THRU -109	1010400-105 THRU -109	1010400-105 THRU -109			2-111, 1-11	3	CLAMP, LOOP, HINGED	SEE NOTES 6 & 14	56	63
1010400-1 THRU -7	1010400-1 THRU -7	1010400-1 THRU -7	1010400-1 THRU -7	1010400-1 THRU -7			11	15	CLAMP, LOOP, HINGED	SEE NOTES 6 & 14	56	62
1010349-4 THRU -6 OR 1010400-1 THRU -7	1010349-4 THRU -6 OR 1010400-1 THRU -7	1010349-4 THRU -6	1010349-4 THRU -6	1010349-4 THRU -6			11	3	CLAMP, LOOP, HINGED	SEE NOTES 6 & 14	56	61
1008807-3 THRU -5	1008807-3 THRU -5	1008807-3 OR -4	1008807-3 OR -4	1008807-3 OR -4			11	2	CLAMP, LOOP-CUSHIONED, MULTIPLE TYPE	SEE NOTES 6 & 14	56	60
2014731	2014731	2014731	2014731	2014731			11	2	BRACKET, CABLE CLAMP	SEE NOTE 14	56	59
2021319	2021319	2021319	2021319	2014648			11	1	WIRING HARNESS H	SEE NOTE 14	56	58
2021318	2021318	2021318	2021318	2014647			11	1	WIRING HARNESS G	SEE NOTE 14	56	57
2021317	2021317	2021317	2021317	2014646			11	1	WIRING HARNESS F	SEE NOTE 14	56	56
2021316	2021316	2021316	2021316	2014645			11	1	WIRING HARNESS E	SEE NOTE 14	56	55
2021315	2021315	2021315	2021315	2014644			11	1	WIRING HARNESS D	SEE NOTE 14	56	54
2021314	2021314	2021314	2021314	2014643			11	1	WIRING HARNESS C	SEE NOTE 14	56	53
2021313	2021313	2021313	2021313	2014642			11	1	WIRING HARNESS B	SEE NOTE 14	56	52
2021406	2021406	2021312	2021312	2014641			111	1	WIRING HARNESS A	SEE NOTE 14	56	51
2014567-071	2014567-071	2014567-061	2014567-061	2014567-011					G & N INTERCONNECT HARNESS GROUP (C/M BLOCK II)	SEE NOTE 4	56	50
			2010748	—			11	1	WIRING HARNESS J		56	49
2018821-011	2018821-011	2018821-021	2018821-021	2018821-011			11	2	HOSE ASSY, FLEX, IMU TO S/C		55	48
2012816-010	2012816-000	—	—	—				1	SCT LER EYEPIECE HIGH DENSITY FILTER ASSY		65	47
2012808-000	2012808-000	—	—	—				1	SXT STD EYEPIECE HIGH DENSITY FILTER ASSY		65	46
1021362-011	1021362-011	1021362-011	1021362-011	—		KSC		1	DUST COVER ASSY SXT		65	45
1021352-011	1021352-011	1021352-011	1021352-011	—		KSC		1	DUST COVER ASSY SCT		65	44
1008493	1008493	1008493	SEE NOTE 19	—			111	7	INSULATOR	SEE NOTE 14	65	43
1008488-000	1008488-000	1008488-000	"	—			111	4	SCREW, SLOTTED, SPECIAL	SEE NOTE 14	65	42
1008487-003	1008487-003	1008487-003		—			111	4	SCREW	SEE NOTE 14	65	41
1008487-002	1008487-002	1008487-002		—			111	1	SCREW	SEE NOTE 14	65	40
1008487-001	1008487-001	1008487-001		—			111	4	SCREW	SEE NOTE 14	65	39
1008486	1008486	1008486		—			111	13	WASHER	SEE NOTE 14	65	38
1021378-021	1021378-021	"		—			111	1	CROWN HALF & PLUG ASSY, SXT	SEE NOTE 14	65	37
1021377-021	1021377-021	SEE NOTE 19		—			111	1	CROWN HALF & PLUG ASSY, SCT	SEE NOTE 14	65	36
1021375-051	1021375-051	1021373-051		—					ASTRO SEXTANT PASSIVE THERMAL PROTECTIVE SYSTEM ASSY		65	35
2021394-011	2021394-011	2021394-011	2021394-011	2014576-011			11	1	OPTICS SHROUD ASSY		50	34
2021301-011	2021301-011	2014764-011	2014764-011	2014764-011			11	2	HANDLE ASSY	SEE NOTE 15	50	33
2021270-051	2021270-051	2021323-021	2021323-011	2014578-011			11	1	G & N INDICATOR CONTROL PANEL ASSY	SEE NOTE 4	50	32
2021478	—	—	—	—		KSC		1	FRAME ASSY IND PANEL		55	31
2021379-002	2021379-002	2021379-002	2010784-011	1008829-002			111	2	GASKET, RETAINED	SEE NOTE 15	45	30
2021379-001	2021379-001	2021379-001	2010784-010	1008829-001			111	2	GASKET, RETAINED	SEE NOTE 15	45	29
2021378-003	2021378-003	2021378-003	2010784-009	1008828-003			111	1	GASKET, RETAINED	SEE NOTE 15	45	28
2021378-002	2021378-002	2021378-002	2010784-008	1008828-002			111	2	GASKET, RETAINED	SEE NOTE 15	45	27
2007200-161	2007200-151	2007200-151	2010743-061 (*)	2007200-011			111	1	PBA	SEE NOTES 4 & 7	45	26
2021469	—	2021465	—	—		KSC		1	MARKER, IDENTIFICATION-OPTION CHECK LIST (ALARM CODES)	SEE NOTE 21	55	25
2021473	—	2021466	—	—		KSC		1	PANEL, LAMP RETAINER - STAR LIST	SEE NOTE 20	55	24
2021499	—	2021467	—	—		KSC		1	PANEL, LAMP RETAINER	SEE NOTE 20	55	23
2010784-015	2010784-015	2010784-007	2010784-037	1010991			111	1	GASKET, RETAINED	SEE NOTE 15	40	22
2007222-121	2007222-121	2007222-121	2010744-091 (*)	2007222-031			111	1	CDU	SEE NOTES 4 & 7	40	21
AN960C10L(1897006-019)	AN960C10L(1897006-019)	AN960C10L(1897006-019)	AN960C10L(1897006-019)	AN960C10L(1897006-019)			111	8	WASHER, FLAT	SEE NOTE 15	62	20
MS16996-10	MS16996-10	MS16996-10	MS16996-10	1001488-45			111	8	SCREW-SOCKET HEAD	SEE NOTE 15	62	19
2021582-021	2021582-021	2021582-021	2021582-021	2021255-011			111	1	EYEPIECE STOWAGE UNIT		62	18
2007201-011	2007201-011	2007201-011	2010745-031 (*)	2007201-011			111	1	PEA	SEE NOTES 7 & 14	35	17
2018601-251	2018601-251	2018601-201	2018699-031 (*)	2018601-011			111	1	IMU	SEE NOTES 7,14,17	35	16
2007203-121	2007203-121	2007203-101	—	2007203-011					IMU & PEA	REFERENCE	35	15
—	—	—	2010747-051	—					IMU & ASSOC ELECTRONICS THERMOCOUPLE ASSY	REFERENCE	35	14
												13
2007234-021	2007234-021	2007235-021	2007235-021	—			111	1	SIGNAL CONDITIONER ASSY	SEE NOTE 9	30	12
2021464				—		KSC		1	RETAINER, LAMP		55	11
2007977-11	54-30-20-831-041	2021106-021		—		KSC	—	1	COMPUTER PROGRAM ASSY (FLIGHT ROPES)	SEE NOTE 16	55	10
2004199-011	2004199-011	2004199-011	2004199-000	2004199-000		X		1	INSTALLATION KIT COMPUTER GROUP C/M		05	9
			2003950-061	2003985-051			1-111, 1-1	2	ACC DSKY ASSEMBLY	SEE NOTE 9	05	8
2003994-021	2003994-121	2003994-031	—	—			1-111, 1-11	2	UNIVERSAL DSKY	SEE NOTE 13	05	7
2021488	—	—	—	—		KSC(NR)		1	PANEL INDICATOR-SOUTHERN STAR CHART		55	6
2021487	—	—	—	—		KSC(NR)		1	PANEL INDICATOR-NORTHERN STAR CHART		55	5
2021104-051	2021104-051	2021104-041	2021104-041	2021104-051		X		1	COMPUTER PROGRAM ASSEMBLY (TEST ROPES)	SEE NOTE 16	05	4
1006380	1006380	1006380	1006380	2003055			111	1	GASKET, SEAL 360 PIN CONN.	SEE NOTE 15	05	3
2003993-021	2003993-111	2003993-031	2003100-061	2003100-021			111	1	COMPUTER ASSEMBLY	SEE NOTE 4	05	2
—	—	—	—	—		KSC(NR)		1	APOLLO RANGEFINDER		65	1
	754		653, 688,702,706	359,474 (PARTIAL)		AC LAB INSTALL.	NAA PHASE INSTALL.	QTY	NOMENCLATURE OR DESCRIPTION	REMARKS	EQUIP. CODE	FIND NO.
-061	-051	-041	-021	-011								
206	205	204	202	201								
106	116	101	098	NR G & C LAB								

REVISIONS

ZONE	LTR	DESCRIPTION	CHG NO	DATE	APPROVED
	DV	REPLACES REV DU WITH OUT CHANGE PER TDRR 38684		14 OCT 70	
	DW	REVISED PER TDRR 38271		9 NOV 70	
	DY	REVISION STATUS CHANGED		30 DEC 70	
	DZ	REVISED PER TDRR 38513		30 JAN 71	
	EA	REVISION STATUS CHANGED		18 FEB 71	
	EB	REVISED PER TDRR 38366		5 MAR 71	
	EC	REVISED PER TDRR 38378		9 APR 71	
	ED	REVISED PER TDRR 38397		28 APR 71	
	EE	REVISION STATUS CHANGED		7 APR 71	
	EF	REVISION STATUS CHANGED		27 APR 71	
	EG	REVISION STATUS CHANGED		6 MAY 71	
	EH	REVISION STATUS CHANGED		19 MAY 71	
	EJ	REVISION STATUS CHANGED		19 MAY 71	
	EK	REVISION STATUS CHANGED		24 MAY 71	
	EL	REVISED PER TDRR 38460		25 MAY 71	
	EM	REVISION STATUS CHANGED		8 JUN 71	
	EN	REVISION STATUS CHANGED		17 SEP 71	
	EP	REVISION STATUS CHANGED		9 OCT 71	
	ER	REVISION STATUS CHANGED		19 NOV 71	
	ES	REVISION STATUS CHANGED		6 DEC 71	
	ET	REVISED PER TDRR 38546		4 JAN 72	
	EU	REVISED PER TDRR 38574		14 JAN 72	
	EV	REVISION STATUS CHANGED		31 JAN 72	
	EW	REVISION STATUS CHANGED		3 FEB 72	
	EY	REVISION STATUS CHANGED		10 FEB 72	
	FE	REVISION STATUS CHANGED		23 FEB 72	
	FA	REVISION STATUS CHANGED		24 FEB 72	
	FB	REVISION STATUS CHANGED		29 FEB 72	
	FC	REVISION STATUS CHANGED		27 MAR 72	
	FD	REVISION STATUS CHANGED		30 MAR 72	
	FE	REVISION STATUS CHANGED		31 MAR 72	
	FF	REVISION STATUS CHANGED		7 APR 72	
	FG	REVISED PER TDRR 38652		21 APR 72	
	FH	REVISED PER TDRR 38655		5 MAY 72	
	FJ	REVISION STATUS CHANGED		8 JUN 72	

QUANTITY REQUIRED	SHT	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	CODE IDENT

LIST OF PARTS AND MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: 2 PLACE ± 5 PLACE ± DECIMALS ANGLES ± DO NOT SCALE THIS DRAWING

MATERIAL —

FINISH 1000000

NEXT ASSY — USED ON — APPLICATION —

MIT INSTRUMENTATION LAB Cambridge, Mass.

DR BY R.A. JONES DATE 9-15-65

CH BY A.L. LUMAS 10-12-65

APPROVAL R.E. LARSON 11-2-65

CONTRACT —

NASA APPROVAL W. KUPFER

MIT APPROVAL A.C. METZGER

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

SPACECRAFT INSTALLATION LIST, APOLLO GUIDANCE EQUIPMENT BLK II

SIZE J CODE IDENT NO. 80230 DRAWING NO. 2014999

SCALE — SHEET 1 OF 3

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2012748-011	2012748-011	2012748-000	2012748-000	2012748-011	2012748-011	2012748-011	2012748-011	2012748-011	2012748-000	2012748
2012700-021	2012700-021	2012700-021	2012700-021	2012700-021	2012700-021	2012700-021	2012700-021	2012700-021	2012700-021	2012700
2012775-011	2012775-011	2012775-000	2012775-000	2012775-011	2012775-000	2012775-011	2012775-000	2012775-000	2012775-000	2012775
2012793-021	2012793-021	2012793-011	2012793-011	2012793-011	2012793-011	2012793-021	2012793-011	2012793-011	2012793-011	2012793
2012791-021	2012791-021	2012791-021	2012791-011	2012791-021	2012791-011	2012791-021	2012791-021	2012791-021	2012791-021	2012791
2012790-011	2012790-011	2012790-000	2012790-000	2012790-011	2012790-011	2012790-011	2012790-011	2012790-011	2012790-000	2012790
2010790-191	2010790-191	2010790-181	2010790-181	2010790-191	2010790-181	2010790-181	2010790-181	2010790-181	2010790-131	2010790
2012797-021	2012797-021	2012797-021	2012797-021	2012797-021	2012797-021	2012797-021	2012797-021	2012797-021	2012797-021	2012797
2012796-021	2012796-021	2012796-021	2012796-021	2012796-021	2012796-021	2012796-021	2012796-021	2012796-021	2012796-021	2012796
2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982
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2007222-271	2007222-261	2007222-231	2007222-181	2007222-271	2007222-261	2007222-261	2007222-231	2007222-181	2007222-231	2007222
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2018601-251	2018601-251	2018601-231	2018601-231	2018601-251	2018601-251	2018601-251	2018601-231	2018601-231	2018601-231	2018601-231
2007203-121	2007203-121	2007203-111	2007203-111	2007203-141	2007203-121	2007203-151	2007203-111	2007203-111	2007203-111	2007203-111
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2003993-091	2003993-111	2003993-061	2003993-051	2003993-051	2003993-111	2003993-071	2003993-111	2003993-111	2003993-031	2003993-031
OUTSTANDING ECP'S PLANNED FOR RETROFIT	754, 725, 1038	754, 752, 725, 1038	754, 752, 706, 790 792, 815, 725,	754, 752, 706, 815, 725,	754, 725			754, 725		702, 706, 724, 725, 754, 752, 732, 815, 795, 1019, 1017, 1030, 1010
CONFIGURATION DASH NO.	-221	-211	-201	-191	-181	-171	-161	-151	-141	-131
G & N SYSTEMS	222	221	220	219	218	217	216	215	214	213
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						II	4	NUT, SELF LOCKING	SEE NOTE 8	56	116
						II	4	WASHER, FLAT	SEE NOTE 8	56	115
						II	4	SCREW, BUTTON HD.	SEE NOTE 8	56	114
						II	1	BRACKET, CONNECTOR	SEE NOTE 8	56	113
						II	1	AMPLIFIER PLATE ASSY	SEE NOTE 8	56	112
						II	1	WIRING HARNESS "K"	SEE NOTE 8	56	111
2012748-011		2012748-000	2012748-011	2012748-011	2012748-011		1	LONG EYE RELIEF EYEPIECE ASSY (SXT)	KSC	65	110
2012700-021		2012700-021	2012700-021	2012700-021	2012700-021	III	1	SXT EYEPIECE ASSY		65	109
2012775-000		2012775-000	2012775-000	2012775-000	2012775-000	III	1	SCT PRISM HOUSING ASSY		65	108
2012793-011		2012793-011	2012793-011	2012793-011	2012793-011	III	1	SCT EYEPIECE ASSY		65	107
2012791-021		2012791-021	2012791-011	2012731-011	2012731-011	III	1	SXT MIRROR HOUSING ASSY		65	106
2012790-011		2012790-000	2012790-011	2012790-011	2012790-011	KSC	1	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	105
						II	1	OPTICAL UNIT ASSY	SEE NOTE 4	65	104
2010790-181		2010790-131	2010790-181	2010790-181	2010790-181	II	1	OPTICAL UNIT & BELLOWS ASSY	SEE NOTE 4	65	103
2012797-021		2012797-021	2012797-021	2012797-021	X		1	SCT DUST COVER		65	102
2012796-021		2012796-021	2012796-021	2012796-021	X		1	SXT DUST COVER		65	101
2899982-031		2899982-031	2899982-031	2899982-031	2899982-031	II	1	NAV BASE ASSY	SEE NOTE 17	64	100
NAS6741H3		NAS674V19	NAS674V19	NAS674V19	NAS674V19	III	4	BOLT, HEX CAP	SEE NOTE 14	63	99
2021204		2021204	2021204	2021204	2021204	III	2	BUSHING, SLEEVING-IMU MOUNT	SEE NOTE 14	63	98
1899971		1899971	1899971	1899971	1899971	II	6	SPRING-SEAL RETAINING	SEE NOTE 14	63	97
1899997-001 & -002		1899997-001 & -002	1899997-001 & -002	1899997-001 & -002	1899997-001 & -002	II	1	SEAL, PLAIN ENCASED	SEE NOTE 14	63	96
						II	8	SCREW, CAP-SOCKET HEAD, FLAT	SEE NOTE 14	63	95
2899991		2899991	2899991	2899991	2899991	II	3	WASHER, SHOULDERED & RECESSED	SEE NOTE 14	63	94
						II	2	PACKING, PREFORMED, RETAINED	SEE NOTE 14	63	93
						II	2	SEAL-PLAIN ENCASED	SEE NOTE 14	63	92
						II	24	WASHER, FLAT	SEE NOTE 14	63	91
						II	24	NUT, SELF-LOCKING	SEE NOTE 14	63	90
						II	1	OPTICS TO SPACECRAFT SEAL ASSY (SXT)	SEE NOTE 14	63	89
						II	1	OPTICS TO SPACECRAFT SEAL ASSY (SCT)	SEE NOTE 14	63	88
						III	2	BOLT, HEX CAP	SEE NOTE 14	63	87
						II	2	BOLT, IMU MOUNT	SEE NOTE 14	63	86
2899986-001		2899984-001	2899984-001	2899984-001	2899984-001	II	3	COLLAR, CENTERING	SEE NOTE 14	63	85
2899979		2899979	2899979	2899979	2899979	II	6	WASHER-SPRING TEN510M	SEE NOTE 14	63	84
2899977-001		2899977-001	2899977-001	2899977-001	2899977-001	II	3	WASHER, FLAT, LUBRICATED	SEE NOTE 14	63	83
1010728-3		1010728-3	1010728-3	1010728-3	1010728-3	II	3	BOLT, EXTERNAL WRENCHING	SEE NOTE 14	63	82
1899967-001		1899967-001	1899967-001	1899967-001	1899967-001	II	3	BALL, PRECISION	SEE NOTE 14	63	81
1010727-1		1010727-1	1010727-1	1010727-1	1010727-1	II	4	BOLT, INTERNAL WRENCHING	SEE NOTE 14	63	80
AN960C616L(1897006-063)		AN960C616L(1897006-063)	AN960C616L(1897006-063)	AN960C616L(1897006-063)	AN960C616L(1897006-063)	II	4	WASHER, FLAT	SEE NOTE 14	63	79
AN960C516L(1897006-053)		AN960C516L(1897006-053)	AN960C516L(1897006-053)	AN960C516L(1897006-053)	AN960C516L(1897006-053)	II	2	WASHER, FLAT	SEE NOTE 14	63	78
1010727-3		1010727-3	1010727-3	1010727-3	1010727-3	II	2	BOLT, INTERNAL WRENCHING	SEE NOTE 14	63	77
2899988-011		2899988-011	2899988-011	2899988-011	2899988-011	II	1	MOUNTING ASSY, PLANE	SEE NOTE 14	63	76
2899987-011		2899987-011	2899987-011	2899987-011	2899987-011	II	1	MOUNTING ASSY, LINE	SEE NOTE 14	63	75
2899986-011		2899986-011	2899986-011	2899986-011	2899986-011	II	1	MOUNTING ASSY, FIXED	SEE NOTE 14	63	74
2899950-021		2899950-021	2899950-021	2899950-021	2899950-021			NAV BASE, OPT UNIT & BELLOWS INST KIT		63	73
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MS21042-C3		MS21045-C3	MS21045-C3	MS21045-C3	MS21045-C3	III	1	NUT, SELF LOCKING	SEE NOTE 14	56	70
MS16995-2S		MS16995-2S	MS16995-2S	MS16995-2S	MS16995-2S	II	2	SCREW, SOC HD	SEE NOTE 14	56	69
MS16996-10		MS16996-10	MS16996-10	MS16996-10	MS16996-10	III	1	SCREW, SOC HD	SEE NOTE 14	56	68
MS16996-9		MS16996-9	MS16996-9	MS16996-9	MS16996-9	III	3	SCREW, SOC HD	SEE NOTE 14	56	67
1006783-27		1006783-27	1006783-27	1006783-27	1006783-27	II	2	SCREW, BUTTON HEAD	SEE NOTE 14	56	66
1010705-7 THRU -18		1010705-7 THRU -18	1010705-7 THRU -18	1010705-7 THRU -18	1010705-7 THRU -18	I-III, II-II	7	CLAMP	SEE NOTES 6 & 14	56	65
1010705-3 OR -4		1010705-3 OR -4	1010705-3 OR -4	1010705-3 OR -4	1010705-3 OR -4	II	1	CLAMP	SEE NOTES 6 & 14	56	64
1010400-105 THRU -110		1010400-105 THRU -110	1010400-105 THRU -110	1010400-105 THRU -109	1010400-105 THRU -109	2-III, I-II	3	CLAMP, LOOP, HINGED	SEE NOTES 6 & 14	56	63
1010400-1 THRU -7		1010400-1 THRU -7	1010400-1 THRU -7	1010400-1 THRU -7	1010400-1 THRU -7	II	15	CLAMP, LOOP, HINGED	SEE NOTES 6 & 14	56	62
1010349-4 THRU -6 OR 1010400-1 THRU -7		1010349-4 THRU -6 OR 1010400-1 THRU -7	1010349-4 THRU -6 OR 1010400-1 THRU -7	1010349-4 THRU -6 OR 1010400-1 THRU -7	1010349-4 THRU -6 OR 1010400-1 THRU -7	II	3	CLAMP, LOOP, HINGED	SEE NOTES 6 & 14	56	61
1008807-3 THRU -5		1008807-3 THRU -5	1008807-3 THRU -5	1008807-3 THRU -5	1008807-3 THRU -5	II	2	CLAMP, LOOP-CUSHIONED, MULTIPLE TYPE	SEE NOTES 6 & 14	56	60
2014731		2014731	2014731	2014731	2014731	II	2	BRACKET, CABLE CLAMP	SEE NOTE 14	56	59
2021319		2021319	2021319	2021319	2021319	II	1	WIRING HARNESS "I"	SEE NOTE 14	56	58
2021318		2021318	2021318	2021318	2021318	II	1	WIRING HARNESS G	SEE NOTE 14	56	57
2021317		2021317	2021317	2021317	2021317	II	1	WIRING HARNESS F	SEE NOTE 14	56	56
2021316		2021316	2021316	2021316	2021316	II	1	WIRING HARNESS E	SEE NOTE 14	56	55
2021315		2021315	2021315	2021315	2021315	II	1	WIRING HARNESS D	SEE NOTE 14	56	54
2021314		2021314	2021314	2021314	2021314	II	1	WIRING HARNESS C	SEE NOTE 14	56	53
2021313		2021313	2021313	2021313	2021313	II	1	WIRING HARNESS B	SEE NOTE 14	56	52
2021406		2021406	2021406	2021406	2021406	II	1	WIRING HARNESS A	SEE NOTE 14	56	51
2014567-071		2014567-071	2014567-071	2014567-071	2014567-071			G & N INTERCONNECT HARNESS GROUP (C/M BLOCK II)	SEE NOTE 4	55	50
						II	1	WIRING HARNESS J		56	49
2018821-021		2018821-021	2018821-021	2018821-021	2018821-021	II	2	HOSE ASSY, FLEX, IMU TO S/C		55	48
2012816-000		2012816-000	2012816-000	2012816-000	2012811-000		1	SCT LER EYEPIECE HIGH DENSITY FILTER ASSY		65	47
2012808-000		2012808-000	2012808-000	2012808-000	2012CUB-000		1	SCT STD EYEPIECE HIGH DENSITY FILTER ASSY		65	46
1021362-011		1021362-011	1021362-011	1021362-011	1021362-011	KSC	1	DUST COVER ASSY SXT		65	45
1021352-011		1021352-011	1021352-011	1021352-011	1021352-011	KSC	1	DUST COVER ASSY SCT		65	44
1008493		1008493	1008493	1008493	1008493	III	7	INSULATOR	SEE NOTE 14	65	43
1008488-000		1008488-000	1008488-000	1008488-000	1008488-000	III	4	SCREW, SLOTTED, SPECIAL	SEE NOTE 14	65	42
1008487-003		1008487-003	1008487-003	1008487-003	1008487-003	III	4	SCREW	SEE NOTE 14	65	41
1008487-002		1008487-002	1008487-002	1008487-002	1008487-002	III	4	SCREW	SEE NOTE 14	65	40
1008487-001		1008487-001	1008487-001	1008487-001	1008487-001	III	4	SCREW	SEE NOTE 14	65	39
1008486		1008486	1008486	1008486	1008486	III	13	WASHER	SEE NOTE 14	65	38
1021378-021		1021378-021	1021378-021	1021378-021	1021378-021	III	1	CROWN HALF & PLUG ASSY, SXT	SEE NOTE 14	65	37
1021377-021		1021377-021	1021377-021	1021377-021	1021377-021	III	1	CROWN HALF & PLUG ASSY, SCT	SEE NOTE 14	65	36
1021373-051		1021373-051	1021373-051	1021373-051	1021373-051			ASTRO SEXTANT PASSIVE THERMAL PROTECTIVE SYSTEM ASSY		65	35
2021394-011		2021394-011	2021394-011	2021394-011	2021394-011	II	1	OPTICS SHROUD ASSY		50	34
2021301-011		2021301-011	2021301-011	2021301-011	2021301-011	III	1	HANDLE ASSY	SEE NOTE 15	50	33
2021290-041		2021290-041	2021290-041	2021290-041	2021290-041	III	1	G & N INDICATOR CONTROL PANEL ASSY	SEE NOTE 4	50	32
2021479-011		2021479-011	2021479-011	2021479-011	2021479-011	KSC	1	FRAME ASSY IND PANEL		55	31
2021379-002		2021379-002	2021379-002	2021379-002	2021379-002	III	2	GASKET, RETAINED	SEE NOTE 15	45	30
2021379-001		2021379-001	2021379-001	2021379-001	2021379-001	III	2	GASKET, RETAINED	SEE NOTE 15	45	29
2021378-003		2021378-003	2021378-003	2021378-003	2021378-003	III	1	GASKET, RETAINED	SEE NOTE 15	45	28
2021378-002		2021378-002	2021378-002	2021378-002	2021378-002	III	2	GASKET, RETAINED	SEE NOTE 15	45	27
2007200-151		2007200-151	2007200-151	2007200-151	2007200-151	III	1	PSA	SEE NOTES 4 & 7	45	26
2898994		2898994	2898980	2898966		KSC	1	MARKER, IDENTIFICATION-OPTION CHECK LISTS (ALARM CODES)	SEE NOTE 21	55	25
2895995		2895995	2898971	2021473		KSC	1	PANEL, LAMP RETAINER - STAR LIST	SEE NOTE 20	55	24
2858996		2858996	2898967	——		KSC	1	PANEL, LAMP RETAINER	SEE NOTE 20	55	23
2010784-013		2010784-013	2010784-013	2010784-013	2010784-015	III	1	GASKET, RETAINED	SEE NOTE 15	40	22
2007222-231		2007222-231	2007222-231	2007222-231	2007222-231	III	1	CDU	SEE NOTES 4 & 7	40	21
AN960C10L(1897006-019)		AN960C10L(1897006-019)	AN960C10L(1897006-019)	AN960C10L(1897006-019)	AN960C10L(1897006-019)	III	8	WASHER, FLAT	SEE NOTE 15	62	20
MS16996-10		MS16996-10	MS16996-10	MS16996-10	MS16996-10	III	8	SCREW-SOCKET HEAD	SEE NOTE 15	62	19
2021382-021		2021382-021	2021382-021	2021382-031	2021382-021	III	1	EYEPIECE STOWAGE UNIT		62	18
2007201-031		2007201-031	2007201-031	2007201-031		III	1	PEA	SEE NOTES 7 & 14	35	17
2018601-231		2018601-231	2018601-231	2018601-251		III	1	IMU	SEE NOTES 7 & 17	35	16
2007203-111		2007203-111	2007203-111	2007203-111				IMU & PEA	REFERENCE	35	15
								IMU & ASSOC ELECTRONICS THERMOCOUPLE ASSY	REFERENCE	35	14
			2899972	2899968	—	KSC(NR)	1	PANEL, INDICATOR-ALIGNMENT PROCEDURES		55	13
2007234-021		2007234-021	2007234-021	2007234-021	2007234-021	III	1	SIGNAL CONDITIONER ASSY	SEE NOTE 9	30	12
2021464			2021464	2021484		KSC	2	RETAINER, LAMP		55	11
2010802-011,251,231,251,241		2010802-011,251,031,041,051,061	2003972-1061,009,011,121,131,141...	2003572-861103,88,89,91,95		KSC	1	COMPUTER PROGRAM ASSY (FLIGHT ROPES)	SEE NOTE 16	55	10
2004199-011		2004199-011	2004199-011	2004199-011		X	1	INSTALLATION KIT COMPUTER GROUP C/M		05	9
						I-III, I-I	2	AGC DSKY ASSEMBLY	SEE NOTE 9	05	8
2003994-121		2003994-121	2003994-121	2003994-121		I-III, I-I	2	UNIVERSAL DSKY	SEE NOTE 13	05	7
						KSC(NR)	1	PANEL, INDICATOR-SOUTHERN STAR CHART		55	6
						KSC(NR)	1	PANEL, INDICATOR-NORTHERN STAR CHART		55	5
2021104-051		2003972-311,321,931,941,351,361			X		1	COMPUTER PROGRAM ASSEMBLY (TEST ROPES)	SEE NOTE 16	05	4
1006380		1006380	1006380	1006380		III	1	GASKET, SEAL 360 PIN CONN.	SEE NOTE 15	05	3
2003993-031		2003993-061	2003993-031	2003993-031		III	1	COMPUTER ASSEMBLY	SEE NOTE 4	05	2
						KSC(NR)	1	APOLLO RANGE FINDER		55	1

AC LAB INSTALL.	NAA PHASE INSTALL.	QTY	NOMENCLATURE OR DESCRIPTION	REMARKS	EQUIP. CODE	FIND NO.

702, 706, 724, 725, ~~750~~, 754, 752, 790
792, 815, 796,
1013, 1017, 1030, 1040

-141	-131	-121	-111	-101
214	213	212	211	210
110	119	109	108	107

REVISIONS

ZONE	LTR	DESCRIPTION	CHG NO	DATE	APPROVED
	DV	REPLACES REV DU WITH CHANGE PER TDRR 38254		4 OCT 71	JJJ TOL
	DW	REVISED PER TDRR 38271		9 NOV 71	M.G.
	DY	REVISED PER TDRR 38298		10 DEC 71	KCJ
	DZ	REVISED PER TDRR 38313		26 JAN 72	
	EA	REVISED PER TDRR 38345		10 FEB 72	
	EB	REVISED PER TDRR 38346		6 MAR 72	
	EC	REVISION STATUS CHANGED		9 MAY 72	
	ED	REVISED PER TDRR 38397		23 JUN 72	
	EE	REVISED PER TDRR 38401		7 AUG 72	
	EF	REVISED PER TDRR 38406		21 AUG 72	
	EG	REVISED PER TDRR 38409		6 SEP 72	
	EH	REVISED PER TDRR 38413		29 SEP 72	
	EJ	REVISED PER TDRR 38428		31 OCT 72	
	EK	REVISION STATUS CHANGED		22 DEC 72	
	EL	REVISION STATUS CHANGED		25 JAN 73	
	EM	REVISED PER TDRR 38464		9 FEB 73	
	EN	REVISED PER TDRR 38466		21 FEB 73	
	EP	REVISED PER TDRR 38468		9 MAR 73	
	ER	REVISED PER TDRR 38490		2 MAY 73	
	ES	REVISED PER TDRR 38501		16 MAY 73	
	ET	REVISED PER TDRR 38546		4 JUN 73	
	EU	REVISED PER TDRR 38574		18 JUN 73	
	EV	REVISION STATUS CHANGED		2 JUL 73	
	EW	REVISED PER TDRR 38589		17 JUL 73	
	EY	REVISED PER TDRR 38590		30 JUL 73	
	EZ	REVISED PER TDRR 38597		13 AUG 73	
	FA	REVISED PER TDRR 38608		24 AUG 73	
	FB	REVISION STATUS CHANGED		5 SEP 73	
	FC	REVISED PER TDRR 38643		25 SEP 73	
	FD	REVISED PER TDRR 38635		10 OCT 73	
	FE	REVISION STATUS CHANGED		1 APR 74	
	FF	REVISED PER TDRR 38645		7 APR 74	
	FG	REVISION STATUS CHANGED		15 APR 74	
	FH	REVISED PER TDRR 38665		1 MAY 74	
	FJ	REVISED PER TDRR 38657		9 MAY 74	

QUANTITY REQUIRED	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	CODE IDENT

LIST OF PARTS AND MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: X PLACE ± ; X PLACE DECIMALS ± ; ANGLES ± 30'

DO NOT SCALE THIS DRAWING

MATERIAL —

FINISH —

NEXT ASSY — USED ON —

APPLICATION —

ND 10.00000

APPROVAL —

DRAWN	R.A. JONES
CHECKED	A.T. LIONGS
APPROVAL	R.E. LARSON
CONTRACT	
NAA APPROVAL	W. KUPFER
MIT APPROVAL	A.C. METZGER

DATE 11-8-67
DATE 11-18-67
DATE 12-5-67

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SPACECRAFT INSTALLATION LIST, APOLLO GUIDANCE EQUIPMENT BLK II

SIZE J2 | CODE IDENT NO. 80230 | 2014999

SCALE — | SHEET 2 OF 3

2/2014999

						1026636 REV C 1026630 REV -	1026636 REV F		1026628 REV B 1026616 REV -									
	1026754 REV - 1026769 REV A	1026754 REV - 1026769 REV A	1026754 REV - 1026769 REV A	1026754 REV - 1026769 REV A	1026754 REV - 1026769 REV A	1026754 REV - 1026769 REV A	1026754 REV - 1026769 REV A		1026748 REV C 1026620 REV - 1026720 REV B	1026769 REV A							
	1026714 REV B, 1026765 REV A	1026714 REV B, 1026765 REV A	1026714 REV B, 1026765 REV A	1026714 REV B, 1026765 REV A	1026714 REV B, 1026765 REV A	1026714 REV B, 1026765 REV A	1026714 REV B, 1026765 REV A		1026732 REV -	1026769 REV A	1026592 REV - 1026591 REV - 1026594 REV -		1026264 REV -	1026251 REV - 1026571 REV -			
						1026631 REV -	1026631 REV A		1026615 REV -			1026598 REV B	1026598 REV A	1026573 REV -			
	1026764 REV A 1026789 REV A	1026764 REV A 1026789 REV A	1026764 REV A 1026789 REV A	1026764 REV A 1026789 REV A	1026764 REV A 1026789 REV A	1026764 REV -	1026764 REV A 1026789 REV A		1026731 REV -	1026764 REV A 1026789 REV A	1026290 REV A	1026263 REV -	1026586 REV - 1026133 REV B	1026566 REV -			
	1026736 REV -	1026766 REV -	1026766 REV -	1026766 REV -	1026766 REV -	1026721 REV -	1026753 REV -										
	1026192 REV - 1026730 REV - 1026190 REV -	1026192 REV - 1026790 REV - 1026190 REV -	1026192 REV - 1026191 REV - 1026190 REV -	1026192 REV - 1026191 REV - 1026190 REV -	1026192 REV - 1026191 REV - 1026190 REV -	1026192 REV - 1026719 REV - 1026118 REV -	1026192 REV - 1026191 REV - 1026190 REV -	1026192 REV - 1026191 REV - 1026190 REV -	1026192 REV - 1026191 REV - 1026190 REV -	1026790 REV -	1026192 REV - 1026190 REV -	1026192 REV - 1026191 REV - 1026190 REV -	1026192 REV - 1026191 REV - 1026190 REV -					
	1026766 REV A 1026763 REV A 1026762 REV A 1026761 REV A	1026766 REV A 1026763 REV A 1026762 REV A 1026761 REV A	1026766 REV A 1026763 REV A 1026762 REV A 1026761 REV A	1026766 REV A 1026763 REV A 1026762 REV A 1026761 REV A	1026766 REV A 1026763 REV A 1026762 REV A 1026761 REV A	1026766 REV - 1026763 REV - 1026762 REV - 1026761 REV -	1026766 REV A 1026763 REV A 1026762 REV A 1026761 REV A		1026730 REV - 1026729 REV - 1026725 REV - 1026727 REV -	1026766 REV A 1026763 REV A 1026762 REV A 1026761 REV A	1026289 REV - 1026288 REV - 1026287 REV - 1026286 REV -	1026262 REV - 1026261 REV - 1026260 REV - 1026289 REV -	1026235 REV - 1026234 REV -	1026208 REV B 1026202 REV B 1026207 REV C 1026207 REV B	1026201 REV - 1026200 REV - 1026199 REV - 1026198 REV -		
	1026768 REV A 1026534 REV A, 1026567 REV A	1026768 REV A 1026534 REV A, 1026567 REV A	1026768 REV A 1026534 REV A, 1026567 REV A	1026768 REV A 1026534 REV A, 1026567 REV A	1026768 REV A 1026534 REV A, 1026567 REV A	1026768 REV - 1026534 REV - 1026629 REV A	1026768 REV A 1026534 REV A, 1026567 REV A	1026534 REV A, 1026567 REV A	1026622 REV - 1026681 REV A 1026617 REV -	1026768 REV A 1026534 REV A, 1026567 REV A	1026602 REV - 1026601 REV A 1026606 REV - 1026610 REV B	1026590 REV - 1026589 REV A 1026597 REV - 1026596 REV C	1026568 REV A 1026567 REV - 1026578 REV - 1026577 REV A 1026576 REV B	1026535 REV - 1026534 REV A 1026536 REV A 1026537 REV B 1026536 REV P	1026532 REV - 1026530 REV A 1026518 REV A 1026517 REV D 1026516 REV K		
	1026760 REV A 1026759 REV A 1026758 REV A 1026767 REV A	1026760 REV A 1026759 REV A 1026758 REV A 1026767 REV A	1026760 REV A 1026759 REV A 1026758 REV A 1026767 REV A	1026760 REV A 1026759 REV A 1026758 REV A 1026767 REV A	1026760 REV A 1026759 REV A 1026758 REV A 1026767 REV A	1026760 REV - 1026759 REV - 1026758 REV - 1026767 REV -	1026760 REV A 1026759 REV A 1026758 REV A 1026767 REV A		1026726 REV - 1026725 REV - 1026724 REV - 1026722 REV -	1026760 REV A 1026759 REV A 1026758 REV A 1026767 REV A	1026275 REV - 1026284 REV - 1026283 REV A 1026600 REV -	1026258 REV - 1026257 REV - 1026256 REV A 1026585 REV -	1026585 REV B 1026584 REV A 1026583 REV A 1026565 REV -	1026206 REV C 1026205 REV C 1026204 REV D 1026533 REV A	1026197 REV - 1026196 REV A 1026195 REV - 1026519 REV A		
								1026183 REV - 1026184 REV -	1026183 REV - 1026184 REV -	1026183 REV - 1026184 REV -	1026183 REV - 1026184 REV -	1026183 REV - 1026184 REV -	1026183 REV - 1026184 REV -	1026183 REV - 1026184 REV -	1026183 REV - 1026184 REV -	1026164 REV - 1026165 REV -		
CONFIGURATION DASH NO.	-221	-211	-201	-191	-181	-171	-161	-151	-141	-131	-121	-111	-101	-091	-081	-071		
GEN SYSTEMS	222	221	220	219	218	217	216	215	214	213	212	211	210	209	208	207		
SPACECRAFT ALLOCATION	118	117	115A	115	114	112	113	111	110	119	109	108	107	106	103	AC HOUSE SYS		

2014999 REV FJ 3

1/2014999

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG NO.	DATE	APPROVED
	DV	REPLACES REV DU WITH CHANGE PER TDRR 38254		14 OCT 70	JJ
	DW	REVISED PER TDRR38271		9 NOV 70	M.S.
	DY	REVISED PER TDRR 38298		10 DEC 70	JCD
	DZ	REVISED PER TDRR 38313		26 JAN 71	JCD
	EA	REVISED PER TDRR38345		18 FEB 71	CP
	EB	REVISION STATUS CHANGED		6 MAR 71	M.S. CP
	EC	REVISION STATUS CHANGED		19 MAR 71	JJ
	ED	REVISION STATUS CHANGED		26 MAR 71	JJ
	EE	REVISION STATUS CHANGED		9 APR 71	JJ
	EF	REVISION STATUS CHANGED		27 APR 71	JJ
	EG	REVISED PER TDRR 38409		6 MAY 71	JJ
	EH	REVISED PER TDRR 38419		25 MAY 71	JJ
	EJ	REVISION STATUS CHANGED		8 JUN 71	JCD
	EK	REVISED PER TDRR 38647		22 JUL 71	JJ
	EL	REVISION STATUS CHANGED		25 AUG 71	RD
	EM	REVISION STATUS CHANGED		8 SEP 71	DHD
	EN	REVISION STATUS CHANGED		17 SEP 71	
	EP	REVISED PER TDRR 38468		4 OCT 71	JCD
	ER	REVISED PER TDRR 38490		8 NOV 71	PHS/CP
	ES	REVISION STATUS CHANGED		6 OCT 71	PHS
	ET	REVISED PER TDRR 38546		4 JAN 72	PHS
	EU	REVISION STATUS CHANGED		14 JAN 72	PHS
	EV	REVISED PER TDRR 38586		18 JAN 72	DHD
	EW	REVISION STATUS CHANGED		3 FEB 72	DHD
	EY	REVISION STATUS CHANGED		10 FEB 72	JK
	EZ	REVISION STATUS CHANGED		23 FEB 72	JK
	FA	REVISION STATUS CHANGED		24 FEB 72	EHS
	FB	REVISED PER TDRR 38608		15 MAR 72	EHS
	FC	REVISION STATUS CHANGED		17 MAR 72	EHS
	FD	REVISION STATUS CHANGED		31 MAR 72	EHS
	FE	REVISED PER TDRR 38643		7 APR 72	EHS
	FF	REVISION STATUS CHANGED		7 APR 72	EHS
	FG	REVISION STATUS CHANGED		24 MAY 72	RE
	FH	REVISION STATUS CHANGED		5 JUN 72	EHS
	FJ	REVISION STATUS CHANGED		8 JUN 72	RE

				1026754 REV-					
				1026719 REV B, 1026765 REV A					
		1026551 REV -							
		1026550 REV -							
		1026233 REV A	1026764 REV A						
			1026789 REV A						
				1026756 REV-					
		1026192 REV -							
		1026191 REV -	1026790 REV -						
		1026190 REV -							
	1026533 REV -				10,6530 REV A				
B	10,6201 REV -	1026232 REV -	1026766 REV A						
A	10,6200 REV -	1026231 REV -	1026765 REV A						
C	10,6199 REV -	1026230 REV -	1026762 REV A						
B	10,6198 REV -	1026229 REV -	1026761 REV A						
					1026531 REV -				
-	10,6521 REV -	1026547 REV-	1026768 REV A						
A	10,6520 REV A	1026548 REV -	1026534 REV A, 1026567 REV A						
A	10,6518 REV A	1026561 REV -		1026504 REV B					
B	10,6517 REV D	1026560 REV B		1026503 REV C					
P	10,6516 REV K	1026559 REV E		1026502 REV J					
				1026182 REV-					
C	10,6197 REV -	1026228 REV-	1026760 REV A	1026168 REV -					
C	10,6196 REV A	1026227 REV-	1026759 REV A	1026167 REV A					
D	10,6195 REV -	1026226 REV -	1026758 REV A	1026166 REV -					
A	10,5519 REV A	1026549 REV -	1026767 REV A	1026505 REV C					
			1026140 REV—						
-	10,26164 REV -	1026183 REV -							
-	10,26165 REV -	1026184 REV -	1026756 REV-	1026143 REV-		1026137 REV-			
			1026789 REV-	1026144 REV-		1026136 REV B			
	-061	-071	-061	-051	-041	-021	-011		
	208	207	206	205	204	202	201		
	103	AC HOUSE SYS	106	116	101	098	NR G&C IAB		

QTY	NOMENCLATURE OR DESCRIPTION	REMARKS	EQUIP. CODE	FIND NO.
1	E-MEMORY LOAD	SEE NOTE 11	55	171
1	G & N/LV POLARITY	SEE NOTE 11	55	170
1	OPT H/C SLEW RATE & RATE SF	SEE NOTE 11	55	169
1	CMC/OPTICS RATE SCALE FACTOR TEST	SEE NOTE 11	55	168
1	MONITOR CHANNEL 77 ALARMS	SEE NOTE 11	55	167
1	ALMS & INT TEST/RSTRT MON	SEE NOTE 11	55	166
1	ALARMS & INTERRUPTS TESTS	SEE NOTE 11	55	165
1	VHF RANGING TEST FOR VAB	SEE NOTE 11	55	164
1	GN/LV SIMFLIGHT	SEE NOTE 11	55	163
1	SATURN TAKEOVER POLARITY TEST	SEE NOTE 11	55	162
1	VHF RANGING TEST	SEE NOTE 11	55	161
1	G&N TVC ALT TEST	SEE NOTE 11	55	160
				159
				158
				157
				156
1	CSM S/C TEST	SEE NOTE 10	55	155
1	SAMOD INHINT GUARD	SEE NOTE 10	55	154
1	INTEGRATED TEST	SEE NOTE 10	55	153
1	INTERFACE TEST	SEE NOTE 10	55	152
1	SPECIAL GYRO COMPARE TEST	SEE NOTE 11	55	151
1	G&N PIPA BUBBLE TEST	SEE NOTE 11	55	150
1	CM 30-33 MONITOR	SEE NOTE 11	55	149
1	CMC SELF TEST	SEE NOTE 11	55	148
1	CM G&N DP	SEE NOTE 11	55	147
1	CM SAMOD	SEE NOTE 11	55	146
1	IMU PERF. HELP	SEE NOTE 11	55	145
1	IRIG SCALE FACTOR	SEE NOTE 11	55	144
1	IMU PERFORMANCE	SEE NOTE 11	55	143
1	SIMFLIGHT	SEE NOTE 11	55	142
1	MISSION LOAD	SEE NOTE 11	55	141
1	LAUNCH LOAD	SEE NOTE 11	55	140
1	LOAD/VERIFY AND VERIFY	SEE NOTE 11	55	139
1	COUNTDOWN INTERFACE	SEE NOTE 11	55	138
1	I.U. INTERFACE	SEE NOTE 11	55	137
1	GN & C INTERFACE	SEE NOTE 11	55	136
1	TVC & RCS DAP POLARITY TES"	SEE NOTE 11	55	135
1	FORMAL VERIF. OF G & N 631 & 632	SEE NOTE 10	55	134
				133
1	INTERFACE TEST	SEE NOTE 10	55	132
1	KST INTEGRATED SYSTEM TEST	SEE NOTE 10	55	131
1	COMBINED SYSTEM TEST	SEE NOTE 10	55	130

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH
NEXT ASSY USED ON
APPLICATION

MIT INSTRUMENTATION LAB
DRAWN B.A. JONES 10 DEC 65
CHECKED A.J. LUDWIG 10 DEC 65
APPROVAL
APPROVAL R.E. LARSON 11-2-67
NASA APPROVAL W. KUPFER
MIT APPROVAL A.C. METZGER

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

SPACECRAFT INSTALLATION LIST GUIDANCE EQUIPMENT BLK

CODE IDENT NO 80230 SIZE J2 NASA DRAWING NO 2014999
SCALE — WT — SHEET 3 OF 3

2014999 REV FJ

NOTES:

1. THIS DRAWING DEFINES CONFIGURATION OF SUBSYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA. SEE INSTALLATION LIST 2014999 FOR CONFIGURATION CHANGES DUE TO RETROFIT.
2. PROCURE TO PS2015000.
3. REFERENCE DRAWINGS:
   G & N-C/M-SUPPORTING DOCUMENT LIST-BLOCK II-2019999.
   INSTALLATION LIST-APOLLO GUIDANCE EQUIPMENT-BLOCK II-2014999.
4. .
5. .
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.
7. G & N SYSTEM USAGE TO BE DETERMINED BY NASA.
8. FIND NO.4 WILL HAVE PROVIDED AS GFP, PART NUMBER 2007203-111.
9. FIND NO.5 WILL HAVE PROVIDED AS GFP, PART NUMBER 2007222-181 OR 2007222-231.
10. FIND NO.13 WILL HAVE PROVIDED AS GFP, PART NUMBER 2018821-021.
11. FIND NO. 24 WILL HAVE PROVIDED AS GFP, PART NUMBER 2011000-081

-111	-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	EFFECTIVITY UNDEFINED	SUBSYSTEM	QTY	EQUIP. CODE	FIND NO.	
211	210	209	208	207	206	205	204	203	202	201	—G & N EFFECTIVITY					
											ECP BREAK-IN					
												2012816-000	SCT LER EYEPIECE HIGH DENSITY FILTER ASSY		65	33	SEE NOTE 7
												2012808-000	SCT STD EYEPIECE HIGH DENSITY FILTER ASSY		65	32	SEE NOTE 7
2021394-011	2021394-011												OPTICS SHROUD	1	50	31	
2021290-021	2021290-021												G&N INDICATOR CONTROL PANEL	1	50	30	
2021382-021	2021382-021	2021382-021	2021382-021	2021382-021	2021382-021	2021382-011	2021382-011	2021382-021	2021382-021				EYEPIECE STORAGE UNIT	1	62	29	
2003994-011 (2003996-021)	2003994-011	2003994-011	2003994-011		2003994-011								UNIVERSAL DSKY	2	05	28	
	1021373-051												ASTRO SEXTANT PASSIVE THERMAL PROTECTIVE SYS. ASSY.	1	65	27	
	1021352-011												DUST COVER ASSY. SCT	1	65	26	
	1021362-011												DUST COVER ASSY. SXT	1	65	25	
2010790-141	2010790-131	2010790-141	2010790-081	2010790-081									OPTICS & BELLOWS ASS'Y	1	65	24	
												1013010-000	SCT PRISM HOUSING ASSEMBLY		65	23	
												2012699-000	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY		65	22	
												2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	21	
												2012667-000	SCT PRISM HOUSING AND INSULATION ASSEMBLY		65	20	
												2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	19	SEE NOTE 7
												2012748-000	LONG EYE RELIEF EYEPIECE ASSEMBLY (SXT)		65	18	
												2012691-000	LONG EYE RELIEF EYEPIECE ASSEMBLY (SCT)		65	17	
2004199-011	2004199-011	2004199-011	2004199-011		2004199-011	2004199-011	2004199-011						INSTALLATION KIT COMPUTER GROUP C/M	1	05	16	
						2003950-011	2003950-011						AGC DSKY ASSEMBLY	2	05	15	
2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-011		2003993-011	2003200-021	2003200-011						COMPUTER ASSEMBLY	1	05	14	
2018821-021	2018821-011	2018821-011	2018821-011	2018821-011	2018821-011	2018821-011	2018821-011	2018821-011	2018821-011	2018821-011			HOSE ASSY, FLEXIBLE, IMU TO SPACECRAFT	2	55	13	
		2021255-011	2021255-011	2021255-011	2021255-011	2021255-011	2021255-011		2021255-011	2021255-011			EYEPIECE STORAGE UNIT ASSEMBLY	1	62	12	
2007234-021	2007234-011	2007234-011	2007234-011	2007234-011	2007234-011	2007234-011							SIGNAL CONDITIONER ASSY C/M, OPERATIONAL	1	30	11	
					2011000-041	2011000-032	2011000-032		2011000-032	2011000-031			OPTICAL UNIT	1	65	10	
							2007235-011	2007235-011					SIGNAL CONDITIONER ASSY C/M F/O	1	30	9	
2899950-021	2899950-021	2899950-021	2899950-021	2899950-021	2899950-021	2899950-011	2899950-011	2899950-011	2899950-011	2899950-011			NAV BASE, OPT UNIT AND BELLOWS INSTALLATION KIT	1	63	8	
		2014623-031	2014623-021	2014623-021	2014623-011	2014623-011	2014623-011	2014623-011	2014623-011	2014623-011			DISPLAY AND CONTROL GROUP	1	50	7	
2007200-151	2007200-151	2007200-121	2007200-121	2007200-111	2007200-111	2007200-081	2007200-061	2007200-031	2007200-021	2007200-011			POWER AND SERVO ASSEMBLY	1	45	6	
2007222-181 OR 2007222-231	2007222-181 OR 2007222-231	2007222-161	2007222-161	2007222-111	2007222-161	2007222-091	2007222-071	2007222-031	2007222-031	2007222-031			COUPLING DATA UNIT	1	40	5	
2007203-111	2007203-101	2007203-071	2007203-051	2007203-051	2007203-051	2007203-051	2007203-031	2007203-031	2007203-021	2007203-021	2007203-011		INERTIAL MEAS. UNIT AND PIPA ELECTRONICS ASSEMBLY	1	35	4	
2014567-071	2014567-071	2014567-041	2014567-041	2014567-041	2014567-031	2014567-031	2014567-031	2014567-031	2014567-021	2014567-011			G & N INTERCONNECT HARNESS GROUP (C/M, BLOCK II)	1	56	3	
2899982-051	2899982-031	2899982-011	2899982-011	2899982-011	2899982-011	2899982-011	2899982-021	2899932-021	2899982-011	2899982-011			NAVIGATION BASE ASSEMBLY BLOCK II	1	64	2	
									2003101-021	2003101-021			APOLLO GUIDANCE COMPUTER GROUP	1	05	1	

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPD
	AG	REPLACES SEA AF WITH CHANGE PER TDRR 31469		25 OCT 67	
	AH	REVISED PER TDRR 31548		30 OCT 67	
	AJ	REVISED PER TDRR 31653		1 NOV 67	
	AK	REVISED PER TDRR 32027		16 NOV 67	
	AL	REVISED PER TDRR 32287		7 DEC 67	
	AM	REVISED PER TDRR 32586		4 JAN 68	
	AN	REVISED PER TDRR 32587		4 JAN 68	
	AP	REVISED PER TDRR 32588		4 JAN 68	
	AR	REVISED PER TDRR 32589		4 JAN 68	
	AS	REVISED PER TDRR 32592		5 JAN 68	
	AT	REVISED PER TDRR 32593		5 JAN 68	
	AU	REVISED PER TDRR 32665		8 JAN 68	
	AV	REVISED PER TDRR 32746		15 JAN 68	
	AW	REVISED PER TDRR 33034		9 FEB 68	
	AY	REVISED PER TDRR 33036		9 FEB 68	
	AZ	REVISED PER TDRR 33036		9 FEB 68	
	BA	REVISED PER TDRR 33039		9 FEB 68	
	BB	REVISED PER TDRR 35106		12 JUNE 68	
	BC	REVISED PER TDRR 35204		7 AUG 68	
	BD	REVISED PER TDRR 33067		5 MAY 67	
	BE	REVISED PER TDRR 33741		5 MAY 67	
	BF	REVISED PER TDRR 33833		19 MAY 67	
	BG	REVISION STATUS CHANGED		5 JUNE 67	
	BH	REVISED PER TDRR 34171		5 JULY 67	
	BJ	REVISED PER TDRR 34178		5 JULY 67	
	BA	REVISED PER TDRR 34175		6 JULY 67	
	BL	REVISED PER TDRR 34333		21 AUG 67	
	BM	REVISED PER TDRR 34352		23 AUG 67	
	BN	REVISED PER TDRR 34353		23 AUG 67	
	BP	REVISED PER TDRR 34505		6 SEP 67	
	BR	REVISED PER TDRR 34583		19 SEP 67	
	BS	REVISED PER TDRR 34364		20 SEP 67	
	BT	REVISED PER TDRR 34585		25 SEP 67	
	BU	REVISED PER TDRR 34627		3 OCT 67	
	BV	REVISED PER TDRR 34628		3 OCT 67	
	BW	REVISED PER TDRR 34629		3 OCT 67	
	BY	REVISED PER TDRR 34630		3 OCT 67	
	BZ	REVISED PER TDRR 34631		3 OCT 67	
	CA	REVISED PER TDRR 34843		17 OCT 67	
	CB	REVISED PER TDRR 34858		6 NOV 67	
	CC	REVISED PER TDRR 34859		9 NOV 67	
	CD	REVISED PER TDRR 34910		14 NOV 67	
	CE	REVISION STATUS CHANGED		27 NOV 67	
	CF	REVISED PER TDRR 35146		1 DEC 67	
	CG	REVISED PER TDRR 35151		1 DEC 67	
	CH	REVISED PER TDRR 35156		15 DEC 67	
	CJ	REVISED PER TDRR 35447		5 FEB 68	
	CK	REVISED PER TDRR 35453		9 FEB 68	
	CL	REVISED PER TDRR 35454		8 FEB 68	
	CM	REVISED PER TDRR 35617		5 MAR 68	
	CN	REVISED PER TDRR 35702		15 FEB 68	
	CP	REVISED PER TDRR 35148		8 MAR 68	
	CR	REVISION STATUS CHANGED		20 MAR 68	
	CS	REVISION STATUS CHANGED		20 MAR 68	
	CT	REVISED PER TDRR 36224		20 MAY 68	
	CU	REVISED PER TDRR 36311		13 JUNE 68	
	CV	REVISION STATUS CHANGED		13 JUNE 68	
	CW	REVISED PER TDRR 36313		10 JULY 68	
	CY	REVISED PER TDRR 36835		25 JULY 68	
	CZ	REVISED PER TDRR 36899		31 JULY 68	
	DA	REVISED PER TDRR 37165		4 SEP 68	
	DB	REVISED PER TDRR 37295		11 SEP 68	
	DC	REVISION STATUS CHANGED		17 SEP 68	
	DD	REVISION STATUS CHANGED		18 SEP 68	

ITEM NO. | REQD | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING

MATERIAL

NEXT ASSY | USED ON

APPLICATION

M.I.T. INSTRUMENTATION LAB Cambridge, Mass.

DRAWN R.A. JONES DATE 1-15-65

CHECKED A.L.C. 1-19-65

APPROVAL W. STANFIELD 1-21-65

CONTRACT

NASA APPROVAL A.C. METZGER

MIT APPROVAL W. KUPPER

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

G & N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK II

SIZE E | CODE IDENT NO. 80230 | 2015000

SCALE | SHEET

												2012816-000	SCT LER EYEPIECE HIGH DENSITY FILTER ASSY		65	33	SEE NOTE 7
												2012808-000	SCT STD EYEPIECE HIGH DENSITY FILTER ASSY		65	32	SEE NOTE 7
2021394-011	2021394-011	2021394-011	2021394-011	2021394-011	2021394-011	2021394-011	2021394-011	2021394-011	2021394-011	2021394-011	2021394-011		OPTICS SHROUD	1	50	31	
2021290-041	2021290-041	2021290-041	2021290-041	2021290-041	2021290-041	2021290-041	2021290-011	2021290-021	2021290-021	2021290-021	2021290-021		G&N INDICATOR CONTROL PANEL	1	50	30	
2021382-021	2021382-021	2021382-021	2021382-021	2021382-021	2021382-021	2021382-021	2021382-021	2021382-021	2021382-021	2021382-021	2021382-021		EYEPIECE STORAGE UNIT	1	62	29	
2003994-051	2003994-051	2003994-051	2003994-021	2003994-051	2003994-021	2003994-021	2003994-021	2003994-021	2003994-021	2003994-021	2003994-021		UNIVERSAL OSKY	2	05	28	
1021373-051	1021373-051	1021373-051	1021373-051	1021373-051	1021373-051	1021373-051	1021373-051	1021373-051	1021373-051	1021373-051	1021373-051		ASTRO SEXTANT PASSIVE TERMAL PROTECTIVE SYSTEM ASSEMBLY	1	65	27	
1021352-011	1021352-011	1021352-011	1021352-011	1021352-011	1021352-011	1021352-011	1021352-011	1021352-011	1021352-011	1021352-011	1021352-011		DUST COVER ASSEMBLY SCT	1	65	26	
1021362-011	1021362-011	1021362-011	1021362-011	1021362-011	1021362-011	1021362-011	1021362-011	1021362-011	1021362-011	1021362-011	1021362-011		DUST COVER ASSEMBLY SXT	1	65	25	
2010790-181 SEE NOTE 11	2010790-181	2010790-181	2010790-181	2010790-181	2010790-131	2010790-131	2010790-131	2010790-131	2010790-131	2010790-131	2010790-131		OPTICS & BELLOWS ASS'Y	1	65	24	
												1013010-000	SCT PRISM HOUSING ASSEMBLY		65	23	
												2012699-000	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY		65	22	
												2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	21	
												2012667-000	SCT PRISM HOUSING AND INSULATION ASSEMBLY		65	20	
												2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	19	SEE NOTE 7
												2012748-000	LONG EYE RELIEF EYEPIECE ASSEMBLY (SXT)		65	18	
												2012691-000	LONG EYE RELIEF EYEPIECE ASSEMBLY (SCT)		65	17	
2004199-011	2004199-011	2004199-011	2004199-011	2004199-011	2004199-011	2004199-011	2004199-011	2004199-011	2004199-011	2004199-011	2004199-011		INSTALLATION KIT COMPUTER GROUP C/M	1	05	16	
													AGC OSKY ASSEMBLY	2	05	15	
2003993-051 OR 2003993-041	2003993-051 OR 2003993-041	2003993-051 OR 2003993-041	2003993-051 OR 2003993-041	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031		COMPUTER ASSEMBLY	1	05	14	
SEE NOTE 10	2018821-021	2018821-021	2018821-021	2018821-021	2018821-021	2018821-021	2018821-021	2018821-021	2018821-021	2018821-021	2018821-021		HOSE ASSY, FLEXIBLE, IMU TO SPACECRAFT	2	55	13	
													EYEPIECE STORAGE UNIT ASSEMBLY	1	62	12	
2007234-021	2007234-021	2007234-021	2007234-021	2007234-021	2007234-021	2007234-021	2007234-021	2007234-021	2007234-021	2007234-021	2007234-021		SIGNAL CONDITIONER ASSY C/M, OPERATIONAL	1	30	11	
													OPTICAL UNIT	1	65	10	
													SIGNAL CONDITIONER ASSY C/M F/Q	1	30	9	
2899950-021	2899950-021	2899950-021	2899950-021	2899950-021	2899950-021	2899950-021	2899950-021	2899950-021	2899950-021	2899950-021	2899950-021		NAV BASE, OPT UNIT AND BELLOWS INSTALLATION KIT	1	63	8	
													DISPLAY AND CONTROL GROUP	1	50	7	
2007200-151	2007200-151	2007200-151	2007200-151	2007200-151	2007200-151	2007200-151	2007200-151	2007200-151	2007200-151	2007200-151	2007200-151		POWER AND SERVO ASSEMBLY	1	45	6	
SEE NOTE 9	2007222-181 OR 2007222-231	2007222-181 OR 2007222-231	2007222-181 OR 2007222-231	2007222-181 OR 2007222-231	2007222-181 OR 2007222-231	2007222-181 OR 2007222-231	2007222-181 OR 2007222-231	2007222-181 OR 2007222-231	2007222-181 OR 2007222-231	2007222-181 OR 2007222-231	2007222-181 OR 2007222-231		COUPLING DATA UNIT	1	40	5	
SEE NOTE 8	2007203-111	2007203-111	2007203-111	2007203-111	2007203-111	2007203-111	2007203-111	2007203-111	2007203-111	2007203-111	2007203-111		INERTIAL MEAS. UNIT AND PIPA ELECTRONICS ASSEMBLY	1	35	4	
2014567-071	2014567-071	2014567-071	2014567-071	2014567-071	2014567-071	2014567-071	2014567-071	2014567-071	2014567-071	2014567-071	2014567-071		G & N INTERCONNECT HARNESS GROUP (C/M, BLOCK II)	1	56	3	
2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031	2899982-031		NAVIGATION BASE ASSEMBLY BLOCK II	1	64	2	
													APOLLO GUIDANCE COMPUTER GROUP	1	05	1	
221	211	201	191	181	171	161	151	141	131	121	EFFECTIVITY UNDEFINED		SUBSYSTEM	QTY	EQUIP. CODE	FIND NO.	
222	221	220	219	218	217	216	215	214	213	212	G & N EFFECTIVITY						
											ECP BREAK-IN						

ZONE	LTR	DESCRIPTION	CHG NO	DATE	APD
	AU	THIS SHEET ADDED PER TDRR 36665		21 JAN 67	AUG
	AV	REVISION STATUS CHANGED		23 JAN 67	
	AW	REVISED PER TDRR 33034		6 FEB 67	
	AY	REVISED PER TDRR 35035		2 MAR 67	
	AZ	REVISED PER TDRR 33036		7 MAR 67	
	BA	REVISED PER TDRR 33039		7 MAR 67	
	BB	REVISED PER TDRR 33166		7 MAR 67	
	BC	REVISED PER TDRR 33204		7 MAR 67	
	BD	REVISION STATUS CHANGED		31 MAR 67	
	BE	REVISION STATUS CHANGED		31 MAR 67	
	BF	REVISION STATUS CHANGED		20 APR 67	
	BG	REVISED PER TDRR 34015		3 MAY 67	
	BH	REVISED PER TDRR 34171		10 MAY 67	
	BJ	REVISED PER TDRR 34172		10 MAY 67	
	BK	REVISED PER TDRR 34173		10 MAY 67	
	BL	REVISED PER TDRR 34338		21 JUNE 67	
	BM	REVISION STATUS CHANGED		29 JUNE 67	
	BN	REVISED PER TDRR 34353		25 JULY 67	
	BP	REVISION STATUS CHANGED		6 SEPT 67	
	BR	REVISION STATUS CHANGED		7 SEPT 67	
	BS	REVISED PER TDRR 34584		20 SEPT 67	
	BT	REVISION STATUS CHANGED		25 SEPT 67	
	BU	REVISED PER TDRR 34627		27 SEPT 67	
	BV	REVISED PER TDRR 34628		3 OCT 67	
	BW	REVISED PER TDRR 34629		4 OCT 67	
	BY	REVISED PER TDRR 34630		9 OCT 67	
	BZ	REVISED PER TDRR 34631		10 OCT 67	
	CA	REVISED PER TDRR 34843		17 OCT 67	
	CB	REVISED PER TDRR 34858		6 NOV 67	
	CC	REVISED PER TDRR 34859		9 NOV 67	
	CD	REVISED PER TDRR 34910		16 NOV 67	
	CE	REVISED PER TDRR 35014		29 NOV 67	
	CF	REVISED PER TDRR 35146		7 DEC 67	
	CG	REVISED PER TDRR 35151		6 DEC 67	
	CH	REVISED PER TDRR 35156		15 DEC 67	
	CJ	REVISED PER TDRR 35447		19 JAN 68	
	CK	REVISED PER TDRR 35453		30 JAN 68	
	CL	REVISED PER TDRR 35454		2 FEB 68	
	CM	REVISED PER TDRR 35617		20 FEB 68	
	CN	REVISED PER TDRR 35702		20 FEB 68	
	CP	REVISED PER TDRR 35748		8 MAR 68	
	CR	REVISED PER TDRR 35837		20 MAR 68	
	CS	REVISED PER TDRR 36036		18 APR 68	
	CT	REVISED PER TDRR 36224		20 MAY 68	
	CU	REVISED PER TDRR 36311		13 JUN 68	
	CV	REVISED PER TDRR 36312		14 JUN 68	
	CW	REVISION STATUS CHANGED		18 JUN 68	
	CY	REVISED PER TDRR 36835		26 JUL 68	
	CZ	REVISED PER TDRR 36899		14 JAN 69	
	DA	REVISED PER TDRR 37165		6 JAN 69	
	DB	REVISED PER TDRR 37295		8 FEB 69	
	DC	REVISED PER TDRR 37329		11 FEB 69	
	DD	REVISED PER TDRR 37344		20 FEB 69	

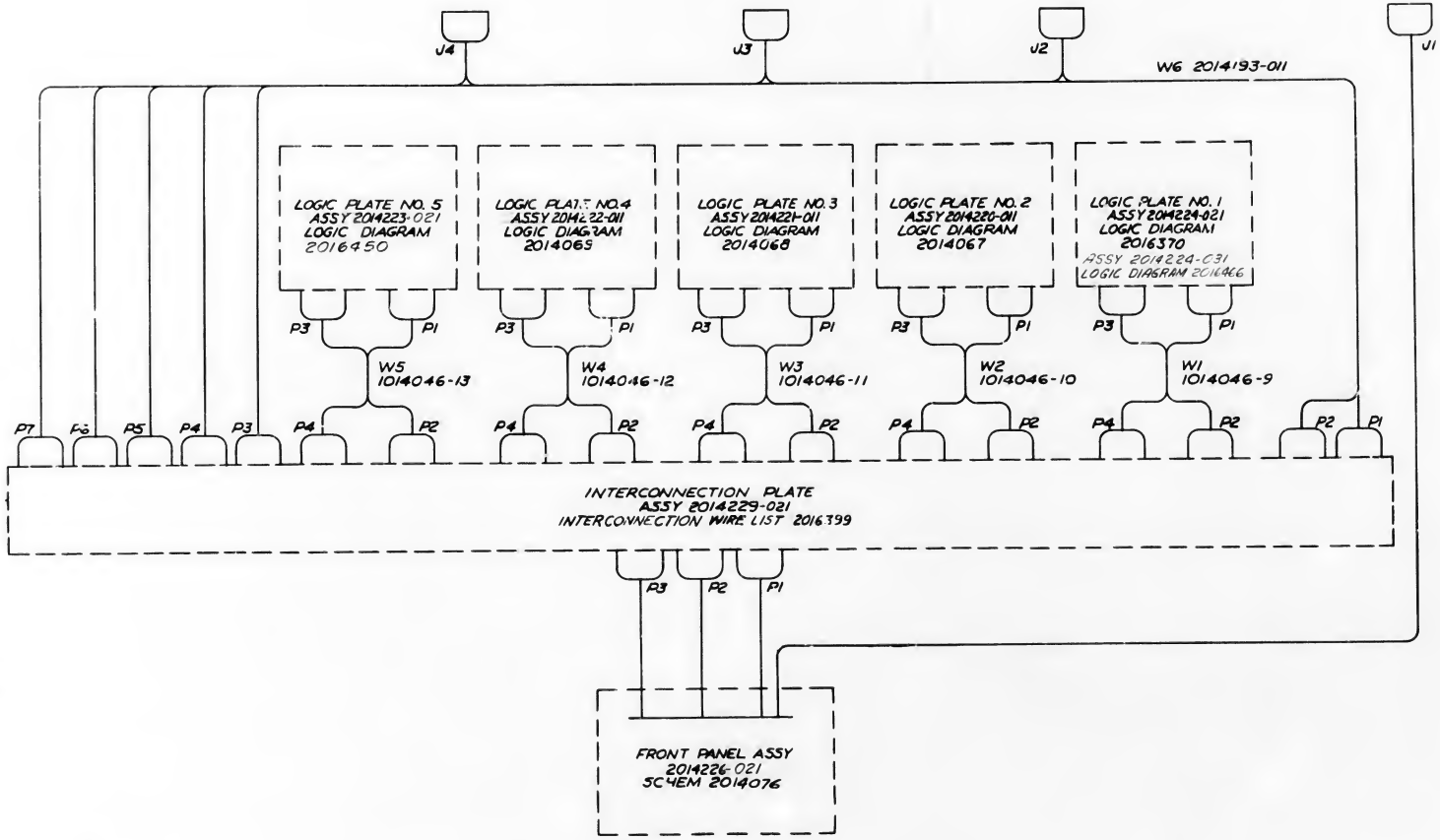
AU THIS SHEET ADDED

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±	INSTRUMENTATION LAB MIT Cambridge Mass.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
		DO NOT SCALE THIS DRAWING	DRAWN R.A. JONES DATE 8 DEC 65	G & N SPACECRAFT EQUIPMENT	
		MATERIAL	CHECKED A.J.C. 10-26-65	COMMAND MODULE	
ND1000000			APPROVAL W. STAMERIS 11 DEC 65	BLOCK II	
NEXT ASSY	USED ON		CONTRACT		
APPLICATION		APPROVAL	S/A APPROVAL A.C. METZGER 19 OCT	SIZE E	CODE IDENT NO 80230
			MIT APPROVAL W. KUPPER 65	SCALE	2015000 SHEET 2 OF 2

2015000

2015000

SC12000



NOTE

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS PREFIX WITH SUB-ASSEMBLY DESIGNATIONS

REFERENCE

1. MAIN ASSY 2014037-0318-041

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TORR		
A	CHANGED PER TORR 33445 DR # CHK & Smith		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS9-497
DRAWN DATE 28 MAY 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INTERCONNECTION DIAGRAM
LOGIC DRAWER NO. 2
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	201645

SCALE NONE WT SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ± DECIMALS .xxx ± ANGLES °
DO NOT SCALE DRAWING
MATERIAL

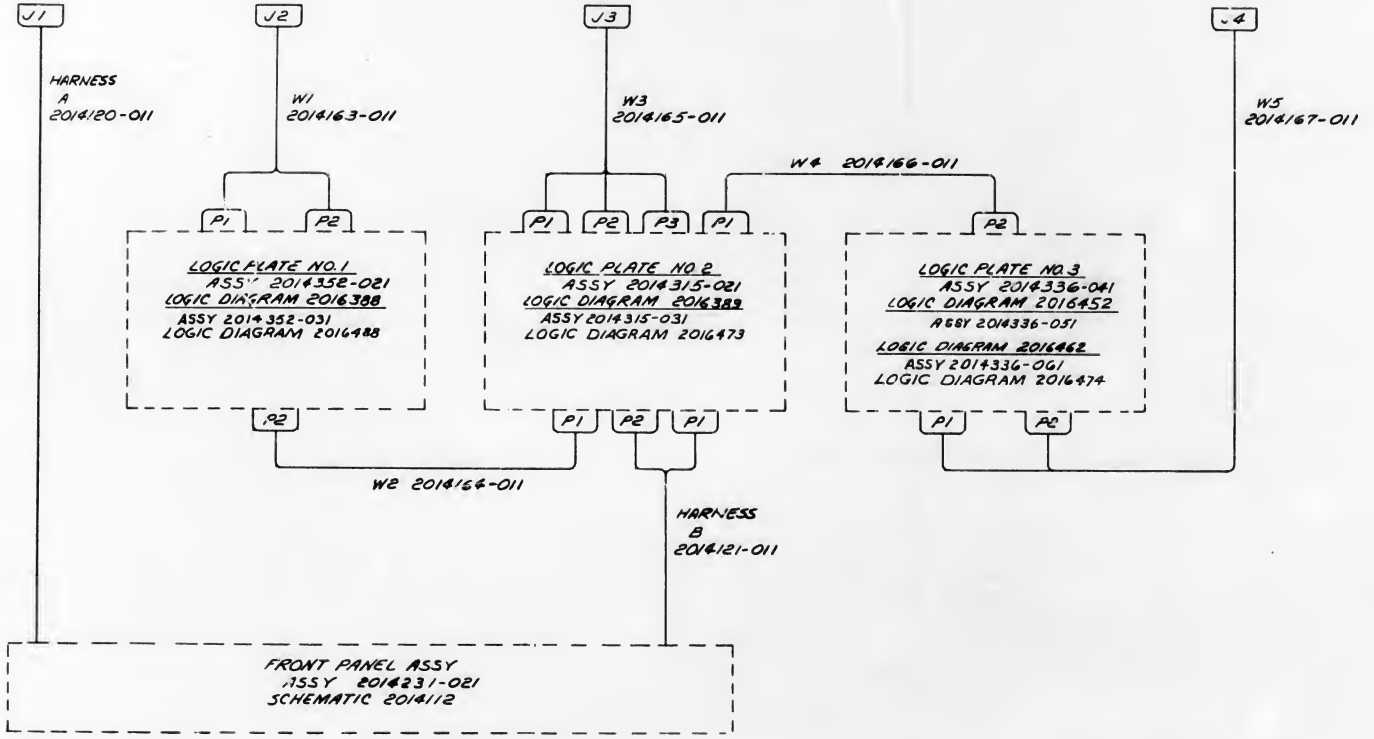
NEXT ASSY | USED ON
APPLICATION

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2016451 A

2016454 B

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 34171	8/1/66	
A	CHANGED PER TDRR 33998 DR # Valentine	9/28/66	
B	CHANGED PER TDRR 35533 DR Barnes	2/21/67	



NOTE
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS PREFIX WITH SUB-ASSEMBLY DESIGNATIONS

REFERENCE
1. MAIN ASSY 2014041-041, 051, & -061

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .xx ± .01, .xxx ± .005, DECIMALS .xxx ± .001, ANGLES ± 0°
DO NOT SCALE DRAWING
MATERIAL
NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 5-497
DRAWN DAIT 12-1-66
CHECKED 12-1-66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL M. J. Bryant 12/1/66
GAC APPROVAL A. J. Thayer
MIT APPROVAL A. Hansen 12/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

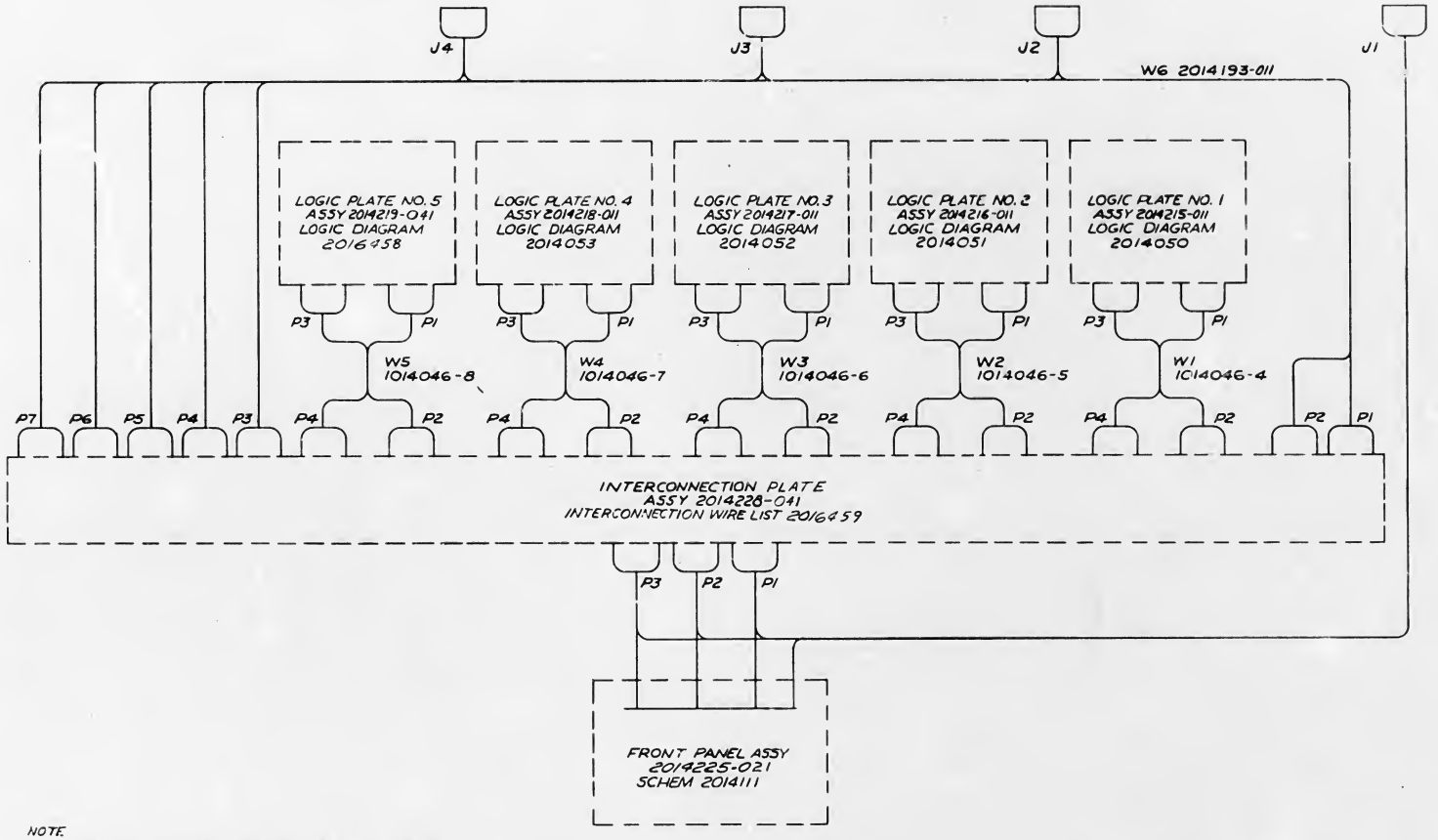
INTERCONNECTION DIAGRAM
PROGRAMMER & MONITOR
CTS

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	2016454
SCALE NONE	WT	SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2016454 B

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A [illegible]		



NOTE.

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS PREFIX WITH SUB-ASSEMBLY DESIGNATIONS

REFERENCE

1. MAIN ASSY 2014036-041

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ± .03 DECIMALS .xxx ± ANGLES °
DO NOT SCALE DRAWING
MATERIAL

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-1000

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO NA 9-497
DRAWN M Dyson DATE 10 APR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

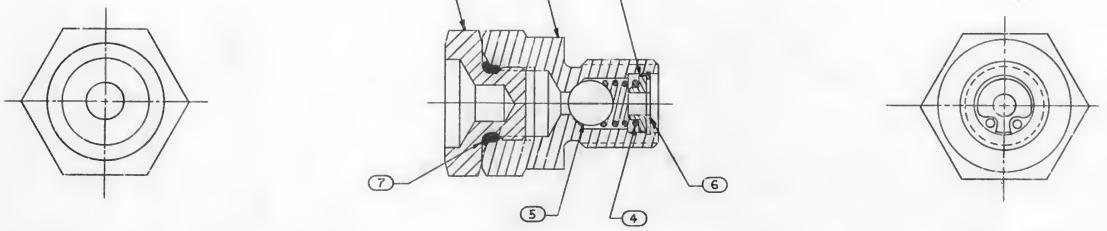
INTERCONNECTION DIAGRAM
LOGIC DRAWER NO.1
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	2016456
SCALE NO. E	WT	SHEET 1 OF 1

2016456

REVISIONS TDRR 12687

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. IDENTIFY USING DWG. NO., REV. LETTER & MANUFACTURERS SYMBOL PER ND 1002019
3. LEAKAGE; NOT TO EXCEED 1.0×10^{-5} CC/SEC AIR AT 30 PSIG AND 68°F ±3°F

LIST OF MATERIALS

QTY REQD	P-JIT OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1000159-4		PACKING, PREFORMED 'O' RING	7
1	MS-16625-4025		RING, RETAINING, INTERNAL	6
1	MS-134334		BALL	5
1	MS-24585-C38		SPRING	4
1	2018770		GUIDE, SPRING	3
1	2018771		PLUG	2
1	2018772		BODY	1

2018601	D1.2018601
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	J.C.FUCHS	8-27-64
CHECKED		
APPROVED		
APPROVED		
APPROVED MIT		
APPROVED MSC		DATE

VALVE, PRESSURE
ASSEMBLY

CODE IDENT NO. | SIZE D | DRAWING NO. 2018773

SCALE 4/1 | SHEET 1 OF 1

2018773

REVISIONS 26871					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A	—	REVISED PER TDRR 27764	AA			
B	—	REVISED PER TDPR 30584				

AURORA PROGRAM ASSEMBLY 2021101

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION										
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	EFFECTIVITY COMPUTER SERIAL NO.							
									ACED T.S.	ACED AGC603	GAEC AGC601	MIT/IL	MSC	G.A.E.C (GEN)	GAEC (ALE)	
2003053-061	2003053-071	2003053-081	2003076			-011 ONE EACH PER COMPUTER	SYSTEM TEST (LEM)	N/A								
						B-1			☒	☒	☒	☒		☒		
						B-2			☒	☒	☒	☒		☒		
						B-3			☒	☒	☒	☒		☒		
						JUMPER			☒	☒	☒	☒		☒		
2003053-061	2003053-171	2003053-181	2003076			-021 ONE EACH PER COMPUTER	SYSTEM TEST (LEM)	N/A								
						B-1			☒				☒	☒	☒	
						B-2			☒				☒	☒	☒	
						B-3			☒				☒	☒	☒	
						JUMPER			☒				☒	☒	☒	

☒ SYMBOL INDICATES MODULE REQUIRED

QTY REQD	PART OR IDENTIFYING NO	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
			LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± °
DO NOT SCALE THIS DRAWING
MATERIAL

ND 1000 000
NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS

DRAWN
CHECKED
APPROVED 3-2-66
APPROVED 3/2/66
APPROVED MIT 3/2/66
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

COMPUTER PROGRAM ASSEMBLY AURORA (LEM)

CODE IDENT NO 80230 | SIZE D | DRAWING NO 2021101

SCALE — | SHEET 1 OF 1

2021101 B

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A	—	REVISED PER TDRR 27764	AA			
B	—	REVISED PER TDRR 30584				
C	—	REVISED PER TDRR 32499				

AURORA PROGRAM ASSEMBLY 2021101

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION												
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	EFFECTIVITY COMPUTER SERIAL NO.									
									GAEC	GAEC	MIT	GAEC	ACED					
2003053-061	2003053-071	2003053-081	2003076-011	2003076-011	2003076-011	-011 ONE EACH PER COMPUTER	SYSTEM TEST (LEM)	N/A										
						B-1			☒	☒	☒	☒						
						B-2			☒	☒	☒	☒						
						B-3			☒	☒	☒	☒						
						JUMPER			☒	☒	☒	☒						
						JUMPER					☒	☒						
						JUMPER					☒	☒						
2003053-061	2003053-171	2003053-181	2003076-011			-021 ONE EACH PER COMPUTER	SYSTEM TEST (LEM)	N/A	LM #1	LM #2	LM #3	LM #4						
						B-1			☒	☒	☒	☒						
						B-2			☒	☒	☒	☒						
						B-3			☒	☒	☒	☒						
						JUMPER			☒	☒	☒	☒						

☒ SYMBOL INDICATES MODULE REQUIRED

QTY REQD	PART OR IDENTIFYING NO	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

ND 1000 000
NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN
CHECKED
APPROVED 3-2-66
APPROVED 3-11-66
APPROVED MIT 3/11/66
APPROVED MSC 3/11/66
DATE

COMPUTER PROGRAM ASSEMBLY AURORA (LEM)

CODE IDENT NO 80230 | SIZE D | DRAWING NO 2021101 | SCALE — | SHEET 1 OF 1

2021101 C

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 29740				
B		REVISED PER TDRR 32498				

SUNDIAL PROGRAM ASSEMBLY 2021104

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION											
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	EFFECTIVITY									
								LAUNCH PERIOD	COMPUTER SERIAL NO.								
2003053-121	2003053-131	2003053-141	2003076-011	2003076	2003076	-011 ONE EACH PER COMPUTER	SYSTEM TEST BL II C/M	N/A	NAA	NAA							
						B-1			☒	☒							
						B-2			☒	☒							
						B-3			☒	☒							
						JUMPER			☒	☒							
						JUMPER			☒	☒							
						JUMPER			☒	☒							
2003053-121	2003053-151	2003053-161	2003076-011			-021 ONE EACH PER COMPUTER	SYSTEM TEST BL II C/M	N/A	NAA	NAA	MIT/IL	ACED	ACED	ACED			
						B-1			☒	☒	☒	☒	☒	☒			
						B-2			☒	☒	☒	☒	☒	☒			
						B-3			☒	☒	☒	☒	☒	☒			
						JUMPER			☒	☒	☒	☒	☒	☒			

☒ SYMBOL INDICATES MODULE REQUIRED

QTY REQD	PART OR IDENTIFYING NO	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

ND 1 000 000
NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN A. Gilmore 9/14/66
CHECKED T. J. Sullivan 9/14/66
APPROVED
APPROVED Edmund C. Hall 9/14/66

COMPUTER PROGRAM ASSEMBLY SUNDIAL C/M

APPROVED MIT M. A. Martin 9/17/66
APPROVED MSC

CODE IDENT NO 80230 | SIZE D | DRAWING NO 2021104

DATE | SCALE — | SHEET 1 OF 1

2021104 B

REVISIONS						2P619
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 33545	R.H.	RC	5-6-67	[illegible]

NEWSPEAK PROGRAM ASSEMBLY 2021105

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION			
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	EFFECTIVITY: LAUNCH PERIOD	EFFECTIVITY: COMPUTER SERIAL NO. (CIB / SUB)
2003053-091	2003053-111					-011 ONE EACH PER COMPUTER B-1 B-2	FTM	N/A	CIB ☒ SUB ☒
2003960-011	2003960-021					-021 ONE EACH PER COMPUTER B-1 B-2	FTM	N/A	
2003972-121	2003972-131					-031 ONE EACH PER COMPUTER B 1 B 2	FTM	N/A	
2003972-221	2003972-131 OR 2003960-021					-041 ONE EACH PER COMPUTER B-1 B-2	FTM	N/A	

☒ SYMBOL INDICATES MODULE REQUIRED

QTY REQD	PART OR IDENTIFYING NO	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

ND 1000 000

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT INSTRUMENTATION LAB CAMBRIDGE MASS

MANNED SPACECRAFT CENTER HOUSTON TEXAS

DRAWN
CHECKED J. Buladay 5/10/67
APPROVED [illegible] 5/10/67
APPROVED E. C. Hall 5/9/67

APPROVED MIT W. Widnall 5/10/67
APPROVED MSC A. C. METZGER DATE

COMPUTER PROGRAM ASSEMBLY NEWSPEAK

CODE IDENT NO 80230 | SIZE D | DRAWING NO 2021105

SCALE — | SHEET 1 OF 1

2021105 A

REVISIONS 2P619					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 33545	[illegible]	[illegible]	[illegible]	[illegible]
B		REVISED PER TDRR 34028	[illegible]	[illegible]	[illegible]	[illegible]

NEWSPEAK PROGRAM ASSEMBLY 2021105

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION			
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	EFFECTIVITY: LAUNCH PERIOD	EFFECTIVITY: COMPUTER SERIAL NO. (CI & SUB)
2003053-091	2003053-111					-011 ONE EACH PER COMPUTER B-1 B-2	FTM	N/A	☒ ☒
2003960-091	2003960-111					-021 ONE EACH PER COMPUTER B-1 B-2	FTM	N/A	
2003972-121	2003972-131					-031 ONE EACH PER COMPUTER B 1 B 2	FTM	N/A	
2003972-221	2003972-131 OR 2003960-111					-041 ONE EACH PER COMPUTER B-1 B-2	FTM	N/A	

☒ SYMBOL INDICATES MODULE REQUIRED

QTY REQD	PART OR IDENTIFYING NO	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL

ND 1 000 000
NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB, CAMBRIDGE MASS
MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

DRAWN
CHECKED J. Preston 7/16/66
APPROVED [illegible] 7/16/66
APPROVED Allen C. Hall 6/2/66
APPROVED MIT W. Wilmarth 6/20/66
APPROVED MSC A. C. METZGER

COMPUTER PROGRAM ASSEMBLY NEWSPEAK

CODE IDENT NO 80230 | SIZE D | DRAWING NO 2021105
DATE | SCALE — | SHEET 1 OF 1

2021105 B

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
-		INTIAL RELEASE TDRR 33462			12 MAY 67	
A		REVISED PER TDRR 33604			5/31/67	

SUNBURST PROGRAM ASSEMBLY 2021106

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION			
								EFFECTIVITY	
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	COMPUTER SERIAL NO.
2003972-141	2003972-151	2003972-161	2003972-171	2003972-181	2003972-191	-011 ONE EACH PER COMPUTER	AS 206 FLIGHT	N/A	
						B-1		NOT TO BE USED FOR FLIGHT CONFIGURATION SEE 2021106-021	☒
						B-2			☒
						B-3			☒
						B-4			☒
						B-5			☒
						B-6			☒
2003972-231	2003972-151	2003972-241	2003972-171	2003972-251	2003972-191	-021 ONE EACH PER COMPUTER	AS 206 FLIGHT	N/A	
						B-1			
						B-2			
						B-3			
						B-4			
						B-5			
						B-6			

☒ SYMBOL INDICATES MODULE REQUIRED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	[signature]	5/26/67
CHECKED	[signature]	5/31/67
APPROVED		
APPROVED	[signature]	5/31/67
APPROVED MSC	[signature]	5/31/67

COMPUTER PROGRAM ASSEMBLY SUNBURST

CODE IDENT NO	SIZE	DRAWING NO.
80230	D	2021106

DATE | SCALE | SHEET OF

2021106 A

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
-		INTIAL RELEASE TDRR 33962			7 Feb 67	

SUNBURST PROGRAM ASSEMBLY 2021106

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION			
								EFFECTIVITY	
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	COMPUTER SERIAL NO.
2003972-141	2003972-151	2003972-161	2003972-171	2003972-181	2003972-191	-011 ONE EACH PER COMPUTER	AS206 FLIGHT	N/A	
						B-1			☒
						B-2			☒
						B-3			☒
						B-4			☒
						B-5			☒
						B-6			☒

☒ SYMBOL INDICATES MODULE REQUIRED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
* * *
DO NOT SCALE THIS DRAWING

MATERIAL

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	D. Young	2/24/67
CHECKED	R. Nelson	2/27/67
APPROVED		
APPROVED	Eldon Hall	3/1/67
APPROVED PROG C.E.		3/29/67
APPROVED MISC		3/30/67

DATE

COMPUTER PROGRAM
ASSEMBLY
SUNBURST

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	2021106

SCALE —— SHEET 1 OF 1

2021106 -

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER IDRR 35336	JMS	[illegible]	11-17-67	

LA MESH PROGRAM ASSEMBLY 2021107

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION			
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	EFFECTIVITY	
								LAUNCH PERIOD	COMPUTER SERIAL NO.
2003972-261	2003972-271	186962-031 SEE NOTE 1	186962-041 SEE NOTE 1	186962-051 SEE NOTE 1	186962-061 SEE NOTE 1	-011 ONE EACH PER COMPUTER	FTM		
						B-1			
						B-2			
						B-3 SEE NOTE 1			
						B-4 SEE NOTE 1			
						B-5 SEE NOTE 1			
						B-6 SEE NOTE 1			
2003972-291	2003972-271	186962-031 SEE NOTE 1	186962-041 SEE NOTE 1	186962-051 SEE NOTE 1	186962-061 SEE NOTE 1	-021 ONE EACH PER COMPUTER	FTM		
						B-1			
						B-2			
						B-3 SEE NOTE 1			
						B-4 SEE NOTE 1			
						B-5 SEE NOTE 1			
						B-6 SEE NOTE 1			

NOTE

1. RAYTHEON FACTORY TEST EQUIPMENT

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
			LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± °
DO NOT SCALE THIS DRAWING

MATERIAL

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APPLICATION

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	[signature]	5-29-67
CHECKED	T. Nelson	5-29-67
APPROVED	[signature]	5-29-67
APPROVED	[signature]	5-29-67
APPROVED E&S	[signature]	11/6/67
APPROVED MSC	[signature]	6/30/67

DATE

COMPUTER PROGRAM ASSEMBLY LA MESH

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 2021107

SCALE NONE | SHEET 1 OF 1

2021107 A

REVISIONS						DRR 36191
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

LA MESH PROGRAM ASSEMBLY 2021107

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION			
						ASSEMBLY		EFFECTIVITY	
PART NO.	PART NO	PART NO	PART NO.	PART NO	PART NO.	DASH NO.	FUNCTION	LAUNCH PERIOD	COMPUTER SERIAL NO.
2003972-261	2003972-271	186962-031 SEE NOTE 1	186962-041 SEE NOTE 1	186962-051 SEE NOTE 1	186962-061 SEE NOTE 1	-011 ONE EACH PER COMPUTER	FTM		
						B-1			
						B-2			
						B-3 SEE NOTE 1			
						B-4 SEE NOTE 1			
						B-5 SEE NOTE 1			
						B-6 SEE NOTE 1			

NOTE

1. RAYTHEON FACTORY TEST EQUIPMENT

QTY REQD	PART OR IDENTIFYING NO	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
			LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
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APPLICATION

MIT INSTRUMENTATION LAB
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MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN		6-24-67
CHECKED	R Wilson	6-24-67
APPROVED	Elsie C Hall for Sidd	
APPROVED	Hemming for Jones 67	
APPROVED MIT QA	S Dana	7/14/67
APPROVED MSC		6/30/67

COMPUTER PROGRAM ASSEMBLY
LA MESH

CODE IDENT NO 80230 | SIZE D | DRAWING NO. 2021107

DATE | SCALE NONE | SHEET 1 OF 1

2021107 -1

REVISIONS TDRR 3621-4

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REV PER TDRR 3641-5			5/10/68	

SUNDANCE PROGRAM ASSEMBLY 2021110

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION			
						ASSEMBLY		EFFECTIVITY	
PART NO.	PART NO	PART NO.	PART NO.	PART NO.	PART NO.	DASH NO.	FUNCTION	LAUNCH PERIOD	COMPUTER SERIAL NO.
2003972-371	2003972-381	2003972-391	2003972-411	2003972-421	2003972-431	-011 ONE EACH PER COMPUTER	LM-3 GROUNT TEST		
						B-1			
						B-2			
						B-3			
						B-4			
						B-5			
						B-6			

QTY REQD	PART OR IDENTIFYING NO	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
			LIST OF MATERIALS	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
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TOLERANCES ON
FRACTIONS DECIMALS ANGLES
* * *
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NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN J.P. Lamond 4-20-68
CHECKED S. Luban 4-29-68
APPROVED Eldon Cahill 5/6/68
APPROVED [illegible] 6 May 68
APPROVED MIT [illegible] 5/7/68
APPROVED MSC [illegible] 5/6/68
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COMPUTER PROGRAM ASSEMBLY SUNDANCE

CODE IDENT NO 80230 | SIZE D | DRAWING NO. 2021110
SCALE NONE | SHEET 1 OF 1

2021110 A

REVISIONS TDRR 36214

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REV PER TDRR 36415				
B		REV PER TDRR 36530				

SUNDANCE PROGRAM ASSEMBLY 2021110

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV NO
2003972-371	2003972-381	2003972-391	2003972-411	2003972-421	2003972-431	-011 ONE EACH PER COMPUTER	LM-3 GROUND TEST		2021150-001	SUNDANCE 292
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2003972-441	2003972-451	2003972-461	2003972-471	2003972-481	2003972-491	-021 ONE EACH PER COMPUTER			2021150-002	SUNDANCE 302
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL MODULES THAT MAKE UP THIS ASSEMBLY ARE TO BE TESTED TO AND MUST MEET THE REQUIREMENTS FOR THE INDIVIDUAL MODULE.

QTY REQD	PART OR IDENTIFYING NO	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
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FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
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NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB CAMBRIDGE MASS

DRAWN J.P. Russell 4-29-68
CHECKED J. Urban 4-29-68
APPROVED [illegible] 5/4/68
APPROVED [illegible] 6 May 68
APPROVED MIT [illegible] 5/7/68
APPROVED MSC [illegible] 5/11/68 DATE

MANNED SPACECRAFT CENTER HOUSTON TEXAS

COMPUTER PROGRAM ASSEMBLY SUNDANCE

CODE IDENT NO 80230 | SIZE D | DRAWING NO 2021110

SCALE NONE | SHEET 1 OF 1

2021110 B

REVISIONS TDRR 36214

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

SUNDANCE PROGRAM ASSEMBLY 2021110

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION			
						ASSEMBLY		EFFECTIVITY	
PART NO.	PART NO.	PART NO.	PAPT NO.	PART NO.	PART NO.	DASH NO.	FUNCTION	LAUNCH PERIOD	COMPUTER SERIAL NO.
2003972-371	2003972-381	2003972-391	2003972-411	2003972-421	2003972-431	-011 ONE EACH PER COMPUTER			
						B-1			
						B-2			
						B-3			
						B-4			
						B-5			
						B-6			

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

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± ± ±
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MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN J.P. Adamonis 6-25-68
CHECKED G. Urban 6-29-68
APPROVED Gilbert Cahill 5/6/68
APPROVED [illegible] 6 May 68

COMPUTER PROGRAM ASSEMBLY SUNDANCE

APPROVED MIT [illegible] 5/7/68
APPROVED MSC [illegible] 5/6/68
DATE

CODE IDENT NO 80230 | SIZE D | DRAWING NO. 2021110

SCALE NONE | SHEET 1 OF 1

2021110

REVISIONS TDRR 36809					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 36859				

COLOSSUS PROGRAM ASSEMBLY 2021111

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO.	PART NO	PART NO	PART NO	PART NO	PART NO	ASSEMBLY DASH NO	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO	PROGRAM REV NO
2003972-511	2003972-521	2003972-531	2003972-541	2003972-551	2003972-561	-021 ONE EACH PER COMPUTER			2021151-002	236
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2003972-511	2003972-521	2003972-531	2003972-541	2003972-551	2003972-561	-031 ONE EACH PER COMPUTER	APOLLO 8		2021151-003	237
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

NOTES:
1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL MODULES THAT MAKE UP THIS ASSEMBLY ARE TO BE TESTED TO AND MUST MEET THE REQUIREMENTS FOR THE INDIVIDUAL MODULE

QTY REQ'D	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

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CAMBRIDGE MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

COMPUTER PROGRAM ASSEMBLY COLOSSUS

CODE IDENT NO 80230 | SIZE D | DRAWING NO. 2021111

SCALE | SHEET 1 OF

2021111 A

REVISIONS TDRR 36808					
SYM	ZONE	DESCRIPTION	DN	CHK	DATE	APPROVED
A		REVISED PER TDRR 36859	MF	TW	11/6/67	[illegible]
B		REVISED PER TDRR 37009	MF	TW	11/29/67	[illegible]

COLOSSUS PROGRAM ASSEMBLY 2021111

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO.	PART NO	PART NO	PART NO	PART NO	PART NO	ASSEMBLY DASH NO	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO	PROGRAM REV NO
2003972 511	2003972-521	2003972-531	2003972-541	2003972-551	2003972-561	-021 ONE EACH PER COMPUTER			2021151-002	236
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2003972-511	2003972-521	2003972-531	2003972-541	2003972-571	2003972-561	-031 ONE. EACH PER COMPUTER	APOLLO 8		2021151-003	237
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2003972-551	2003972-661	2003972-671	2003972-681	2003972-691	2003972-711	-041 ONE EACH PER COMPUTER			2021151-004	249
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

NOTES:
1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
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QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
			LIST OF MATERIALS	

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APPLICATION	

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HOUSTON, TEXAS

DRAWN R. Crisler 12/4/68
CHECKED E. Volante 12/4/68
APPROVED
APPROVED Eldon C. Hall 12/6/68
APPROVED MIT M. C. Mackey 12-7-68
APPROVED MSC [illegible] 12/7/68
DATE

COMPUTER PROGRAM ASSEMBLY COLOSSUS

CODE IDENT NO 80230 | SIZE D | DRAWING NO. 2021111

SCALE | SHEET 1 OF 1

REVISIONS TDRR 36808

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

COLOSSUS PROGRAM ASSEMBLY 2021111

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
PART NO.	PART NO	PART NO	PART NO	PART NO	PART NO	ASSEMBLY DASH NO	FUNCTION	LAUNCH PERIOD	EFFECTIVITY MASTER TAPE DECK NO	PROGRAM REV NO
2003972 511	2003972 521	2003972 -531	2003972 -541	2003972 -551	2003972 -561	-021 ONE EACH PER COMPUTER			2021151-002	236
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

NOTES:
1 INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
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DRAWN	R Hamilton	12 AUG 68
CHECKED	E Hudson	13 AUG 68
APPROVED		
APPROVED	E A Laning	14 AUG 68
APPROVED MIT	M S Mathews	8-19-68
APPROVED MSC		DATE

COMPUTER PROGRAM ASSEMBLY COLOSSUS

CODE IDENT NO	SIZE	DRAWING NO.
80230	D	2021111

SCALE | SHEET 1 OF 1

2021111

REVISIONS TDRR 37147						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 37531	[illegible]	SK	2/11/69	[illegible]

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV. NO.
2003972-721	2003972-731	2003972-741	2003972-751	2003972-761	2003972-771	-011 ONE EACH PER COMPUTER	APOLLO 10 & 11		2021152-001	LUMINARY 69
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2003972-951	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-021 ONE EACH PER COMPUTER	APOLLO 10 & 11		2021152-002	LUMINARY 96
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2003972-721	2003972-931	2003972-741	2003972-751	2003972-761	2003972-771	-031 ONE EACH PER COMPUTER	APOLLO 10 & 11		2021152-003	LUM 69 REV 2
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
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QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
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TOLERANCES ON
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HOUSTON, TEXAS

DRAWN	[signature]	27 NOV 68
CHECKED	[signature]	4 Dec 68
APPROVED	[signature]	4 Dec 68
APPROVED	[signature]	4 Dec 68
APPROVED MIT	[signature]	4 Dec 68
APPROVED MSC	[signature]	2/7/69 DATE

COMPUTER PROGRAM ASSEMBLY LUMINARY

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 2021112

SCALE 1/1 | SHEET 1 OF 1

2021112 A

REVISIONS TDRR 3-7-67					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 37531	[illegible]	[illegible]	2/24/67	[illegible]
B		REVISED PER TDRR 37523	[illegible]	[illegible]	3/24/67	[illegible]

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV. NO.
2003972-721	2003972-731	2003972-741	2003972-751	2003972-761	2003972-771	-011 ONE EACH PER COMPUTER: B-1, B-2, B-3, B-4, B-5, B-6	APOLLO 10 & 11		2021152-001	LUMINARY 69
2003972-951	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-021 ONE EACH PER COMPUTER: B-1, B-2, B-3, B-4, B-5, B-6	~~APOLLO 10 & 11~~		2021152-002	LUMINARY 96
2003972-721	2003972-931	2003972-741	2003972-751	2003972-761	2003972-771	-031 ONE EACH PER COMPUTER: B-1, B-2, B-3, B-4, B-5, B-6	APOLLO 10 & 11		2021152-003	LUM 69 REV 2
2003972-1021	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-041 ONE EACH PER COMPUTER: B-1, B-2, B-3, B-4, B-5, B-6	APOLLO 11		2021152-004	LUMINARY 97

NOTES:

1. INTERPPET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL MODULES THAT MAKE UP THIS ASSEMBLY ARE TO BE TESTED TO AND MUST MEET THE REQUIREMENTS FOR THE INDIVIDUAL MODULE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
			LIST OF MATERIALS	

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±
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MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	[signature]	27 NOV 68
CHECKED	[signature]	4 Dec 68
APPROVED	[signature]	4 Dec 68
APPROVED	[signature]	10 Dec 68
APPROVED MIT	[signature]	9 Dec 68
APPROVED MSC	[signature]	12/19/68

COMPUTER PROGRAM ASSEMBLY LUMINARY

CODE IDENT NO	SIZE	DRAWING NO.
80230	D	2021112

DATE | SCALE 1/1 | SHEET 1 OF 1

2021112 B

REVISIONS TDRR 37147					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 37531	[illegible]	[illegible]	8/19/69	[illegible]
B		REVISED PER TDRR 37523	[illegible]	[illegible]	8/20/69	[illegible]
C		REVISED PER TDRR 37515	[illegible]	[illegible]	8/4/69	[illegible]

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
						ASSEMBLY		EFFECTIVITY		
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV. NO.
2003972-721	2003972-731	2003972-741	2003972-751	2003972-761	2003972-771	-011 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10 & 11		2021152-001	LUMINARY 69
2003972-951	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-021 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	~~APOLLO 10 & 11~~		2021152-002	LUMINARY 96
2003972-721	2003972-931	2003972-741	2003972-751	2003972-761	2003972-771	-031 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10 & 11		2021152-003	LUM 69 REV ?
2003972-1021	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-041 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 11		2021152-004	LUMINARY 97
2003972-1041	2003972-1051	2003972-971	2003972-981	2003972-1061	2003972-1011	-051 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 11		2021152-005	LUMINARY 99

NOTES

1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
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APPLICATION	

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QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	[signature]	27 NOV 68
CHECKED	[signature]	4 Dec 68
APPROVED	[signature]	4 Dec 68
APPROVED	[signature]	9 Dec 68
APPROVED MIT	[signature]	9 Dec 69
APPROVED MSC	[signature]	12/11/68

COMPUTER PROGRAM ASSEMBLY LUMINARY

CODE IDENT NO 80230 | SIZE D | DRAWING NO. 2021112

DATE | SCALE 1/1 | SHEET 1 OF 1

2021112 C

REVISIONS TDRR 3714?

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 37531	[illegible]	[illegible]	8/19/69	[illegible]
B		REVISED PER TDRR 37583	[illegible]	[illegible]	8/26/69	[illegible]
C		REVISED PER TDRR 37615	[illegible]	[illegible]	8/4/69	[illegible] 9/4/69
D		REVISED PER TDRR 37665	[illegible]	[illegible]	9/9/69	TDR 9/9/69

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1 PART NO.	MODULE B-2 PART NO.	MODULE B-3 PART NO.	MODULE B-4 PART NO.	MODULE B-5 PART NO.	MODULE B-6 PART NO.	PROGRAM SPECIFICATION ASSEMBLY DASH NO.	FUNCTION	EFFECTIVITY LAUNCH PERIOD	EFFECTIVITY MASTER TAPE DECK NO.	EFFECTIVITY PROGRAM REV. NO.
2003972-721	2003972-731	2003972-741	2003972-751	2003972-761	2003972-771	-011 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10 & 11		2021152-001	LUMINARY 69
2003972-951	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-021 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	~~APOLLO 10 & 11~~		2021152-002	LUMINARY 96
2003972-721	2003972-931	2003972-741	2003972-751	2003972-761	2003972-771	-031 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10 & 11		2021152-003	LUM 69 REV 2
2003972-1021	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-041 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 11		2021152-004	LUMINARY 97
2003972-1041	2003972-1051	2003972-971	2003972-981	2003972-1061	2003972-1011	-051 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 11		2021152-005	LUMINARY 99

CONTINUED ON SHEET 2

NOTES:
1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2 ALL MODULES THAT MAKE UP THIS ASSEMBLY ARE TO BE TESTED TO AND MUST MEET THE REQUIREMENTS FOR THE INDIVIDUAL MODULE

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

COMPUTER PROGRAM ASSEMBLY LUMINARY

DRAWN	[signature]	27 NOV 68
CHECKED	[signature]	4 Dec 68
APPROVED	[signature]	4 Dec 68
APPROVED	[signature]	4 Dec 68
APPROVED MIT	[signature]	9 Dec 68
APPROVED MSC	[signature]	12/16/68 DATE

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 2021112 | SCALE 1/1 | SHEET 1 OF 2

2021112

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
D		THIS SHEET ADDED PER IDRR 37665				

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV NO.
2003972-1071	2003972-1051	2003972-971	2003972-981	2003972-1061	2003972-1011	-061 ONE EACH PER COMPUTER	APOLLO 11 & 12		2021152-006	LUMINARY 99
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

Ⓓ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON		
APPLICATION			

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CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DR WIN Jim Smith	5 SEPT 69	
CHECKED T. Volpe	8 SEPT 69	
APPROVED R.R. Ragan	9 SEP 69	
APPROVED		
APPROVED MIT		
APPROVED MSC	DATE	

COMPUTER PROGRAM ASSEMBLY LUMINARY

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	2021112

SCALE 1/1 | SHEET 2 OF 2

2021112 D

REVISIONS						
SYM	ZONE	DESCRIPTION	BY	CHK	DATE	APPROVED
A		REVISED PER TDRR 37531	[illegible]	[illegible]	9/1/69	[illegible]
B		REVISED PER TDRR 37583	[illegible]	[illegible]	9/15/69	[illegible]
C		REVISED PER TDRR 37515	[illegible]	[illegible]	9/24/69	[illegible]
D		REVISED PER TDRR 37665	[illegible]	[illegible]	9/29/69	[illegible]
E		REVISED PER TDRR 37797	[illegible]	[illegible]	11/3/69	[illegible]

TDRR 37747

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV. NO.
2003972-721	2003972-731	2003972-741	2003972-751	2003972-761	2003972-771	-011 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10 & 11		2021152-001	LUMINARY 69
2003972-951	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-021 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	~~APOLLO 10 & 11~~		2021152-002	LUMINARY 96
2003972-721	2003972-931	2003972-741	2003972-751	2003972-761	2003972-771	-031 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10 & 11		2021152-003	LUM 69 REV 2
2003972-1021	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-041 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 11		2021152-004	LUMINARY 97
2003972-1041	2003972-1051	2003972-971	2003972-981	2003972-1061	2003972-1011	-051 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 11		2021152-005	LUMINARY 99

CONTINUED ON SHEET 2

NOTES:
1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL MODULES THAT MAKE UP THIS ASSEMBLY ARE TO BE TESTED TO AND MUST MEET THE REQUIREMENTS FOR THE INDIVIDUAL MODULE

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μf RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING MATERIAL

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

DRAWN	[illegible]	27 NOV 68
CHECKED	[illegible]	4 Dec 68
APPROVED	[illegible]	11 Dec 68
APPROVED	[illegible]	9 Dec 68

COMPUTER PROGRAM ASSEMBLY LUMINARY

APPROVED MIT	[illegible]	9 Dec 68	
APPROVED MSC	[illegible]	12/17/68	DATE

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 2021112 | SCALE 1/1 | SHEET 1 OF 2

2021112 E

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
D		THIS SHEET ADDED PER TDRR 37665				TDR 12/6/67 (D)
E		REVISED PER TDRR 37797	WB	RL	11/4/67	TDR 11/6/67 (E)

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
						ASSEMBLY		EFFECTIVITY		
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV NO.
2003972-1071	2003972-1051	2003972-971	2003972-981	2003972-1061	2003972-1011	-061 ONE EACH PER COMPUTER	APOLLO 11 & 12		2021152-006	LUMINARY 99
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2003972-1151	2003972-1161	2003972-1171	2003972-1181	2003972-1191	2003972-1211	-071 ONE EACH PER COMPUTER	APOLLO 12		2021152-007	LUMINARY 116
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

(D) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	Jim Smith	5 SEPT 67
CHECKED	R Weber	8 SEP 67
APPROVED	R.B. Koons	8 SEP 67
APPROVED		
APPROVED MIT		
APPROVED MSC		
DATE		

COMPUTER PROGRAM ASSEMBLY LUMINARY

CODE IDENT NO	SIZE	DRAWING NO.
80230	D	2021112

SCALE 1/1 SHEET 2 OF 2

2021112 E

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 37531				
B		REVISED PER TDRR 37583				
C		REVISED PER TDRR 37615				
D		REVISED PER TDRR 37665				
E		REVISED PER TDRR 37797				
F		REVISED PER TDRR 37918				

REVISIONS TDRR 37147

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV. NO.
2003972-721	2003972-731	2003972-741	2003972-751	2003972-761	2003972-771	-011 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10 & 11		2021152-001	LUMINARY 69
2003972-951	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-021 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	~~APOLLO 10 & 11~~		2021152-002	LUMINARY 96
2003972-721	2003972-931	2003972-741	2003972-751	2003972-761	2003972-771	-031 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10 & 11		2021152-003	LUM 69 REV 2
2003972-1021	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-041 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 11		2021152-004	LUMINARY 97
2003972-1041	2003972-1051	2003972-971	2003972-981	2003972-1061	2003972-1011	-051 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 11		2021152-005	LUMINARY 99

CONTINUED ON SHEET 2

NOTES:
1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL MODULES THAT MAKE UP THIS ASSEMBLY ARE TO BE TESTED TO AND MUST MEET THE REQUIREMENTS FOR THE INDIVIDUAL MODULE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

DRAWN	[illegible]	27 NOV 68
CHECKED	[illegible]	4 DEC 68
APPROVED	[illegible]	4 DEC 68
APPROVED	[illegible]	4 DEC 68
APPROVED MIT	[illegible]	9 DEC 68
APPROVED MSC	[illegible]	12/16/68

COMPUTER PROGRAM ASSEMBLY LUMINARY

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 2021112 | SHEET 1 OF 2 | SCALE 1/1

2021112 F

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
D		THIS SHEET ADDED PER TDRR 37665				[illegible] 9/8/67
E		REVISED PER TDRR 37797	WFB	CW	11/8/67	[illegible] 11/9/67
F		REVISED PER TDRR 37918	WFB	CW	12/14/67	[illegible] 12/14/67

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV NO.
2003972-1071	2003972-1051	2003972-971	2003972-981	2003972-1061	2003972-1011	-061 ONE EACH PER COMPUTER	APOLLO 11 & 12		2021152-006	LUMINARY 99
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2003972-1151	2003972-1161	2003972-1171	2003972-1181	2003972-1191	2003972-1211	-071 ONE EACH PER COMPUTER	APOLLO 12		2021152-007	LUMINARY 116
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2010802-071	2010802-081	2010802-091	2010802-111	2010802-121	2010802-131	-081 ONE EACH PER COMPUTER	APOLLO 13		2021152-008	LUMINARY 130
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

(D) THIS SHEET ADDED

QTY REQ'D	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL

NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN Tom Smith 5 SEPT 67
CHECKED T Usher 8 SEP 67
APPROVED [illegible] 7 SEP 67
APPROVED
APPROVED MIT
APPROVED MSC
DATE

COMPUTER PROGRAM ASSEMBLY LUMINARY

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 2021112

SCALE 1/1 | SHEET 2 OF 2

2021112 F

REVISIONS						
SYM	ZONE	DESCRIPTION	BY	CHK	DATE	APPROVED
A		REVISED PER TDRR 37531				
B		REVISED PER TDRR 37622				
C		REVISED PER TDRR 37615				
D		REVISED PER TDRR 37665				
E		REVISED PER TDRR 37797				
F		REVISED PER TDRR 37918				
G		REVISED PER TDRR 37955				
H		REVISED PER TDRR 38021				
J		REVISED PER TDRR 38133				
K		REVISED PER TDRR 38174				
L		REVISED PER TDRR 38251				

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	EFFECTIVITY: LAUNCH PERIOD	EFFECTIVITY: MASTER TAPE DECK NO.	EFFECTIVITY: PROGRAM REV. NO.
2003972-721	2003972-731	2003972-741	2003972-751	2003972-761	2003972-771	-011 ONE EACH PER COMPUTER: B-1, B-2, B-3, B-4, B-5, B-6	APOLLO 10 & 11		2021152-001	LUMINARY 69
2003972-951	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-021 ONE EACH PER COMPUTER: B-1, B-2, B-3, B-4, B-5, B-6	~~APOLLO 10 & 11~~		2021152-002	LUMINARY 96
2003972-721	2003972-931	2003972-741	2003972-751	2003972-761	2003972-771	-031 ONE EACH PER COMPUTER: B-1, B-2, B-3, B-4, B-5, B-6	APOLLO 10 & 11		2021152-003	LUM 69 REV 2
2003972-1021	2003972-961	2003972-971	2003972-981	2003972-991	2003972-1011	-041 ONE EACH PER COMPUTER: B-1, B-2, B-3, B-4, B-5, B-6	APOLLO 11		2021152-004	LUMINARY 97
2003972-1041	2003972-1051	2003972-971	2003972-981	2003972-1061	2003972-1011	-051 ONE EACH PER COMPUTER: B-1, B-2, B-3, B-4, B-5, B-6	APOLLO 11		2021152-005	LUMINARY 99

CONTINUED ON SHEET 2

NOTES
1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
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QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON | APPLICATION

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MATERIAL

MIT INSTRUMENTATION LAB, CAMBRIDGE, MASS.

DRAWN — CHECKED — APPROVED — APPROVED — APPROVED MIT — APPROVED MSC — DATE

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

COMPUTER PROGRAM ASSEMBLY LUMINARY

CODE IDENT NO 80230 | SIZE D | DRAWING NO 2021112 | SCALE 1/1 | SHEET 1 OF 2

2111202

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
D		THIS SHEET ADDED PER TDRR 37665				PZB 9/8/69
E		REVISED PER TDRR 37797	[illegible]	[illegible]	11/3/69	PZB 11/3/69
F		REVISED PER TDRR 37918	[illegible]	[illegible]	12/14/69	[illegible]
G		REVISED PER TDRR 37955	[illegible]	[illegible]	1/9/70	PZB 1/9/70
H		REVISED PER TDRR 38021	[illegible]	[illegible]	4/3/70	PZB 4/9/70
J		REVISED PER TDRR 38[illegible]33	[illegible]	[illegible]	5/11/70	PZB 5/11/70
K		REVISED PER TDRR 38174	[illegible]	[illegible]	7/12/70	PZB 7/12/70
L		REVISED PER TDRR 38251	[illegible]	[illegible]	9/3/70	PZB 9/8/70

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO.	PART NO	PART NO	PART NO	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV NO.
2003972-1071	2003972-1051	2003972-971	2003972-981	2003972-1061	2003972-1011	-061 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 11 & 12		2021152-006	LUMINARY 99
2003972-1151	2003972-1161	2003972-1171	2003972-1181	2003972-1191	2003972-1211	-071 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 12		2021152-007	LUMINARY 116
2010802-071	2010802-081	2010802-091	2010802-111	2010802-121	2010802-131	-081 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6			2021152-008	LUMINARY 130
2010802--071	2010802--081	2010602-091	2010802--111	2010802--141	2010802--131	-091 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6			2021152--009	LUMINARY 131

CONTINUED ON SHEET 3

Ⓓ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN Jon Smith 5 SEP 69
CHECKED [illegible] 8 SEP 69
APPROVED [illegible] 8 SEP 69
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COMPUTER PROGRAM ASSEMBLY LUMINARY

CODE IDENT NO 80230
SIZE D
DRAWING NO. 2021112
SCALE 1/1
SHEET 2 OF 3

2021112 L

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
H		1 THRU 5 SHEET ADDED PER TORR 36021			4/1/70	4/1/70
J		REVISED PER TORR 36103			5/ /70	7/1/70
K		REVISED PER TORR 36174			7/ /70	10/1/70
L		REVISED PER TORR 36251			10/ /70	11/1/70

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO	PART NO	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV NO.
2010802-071	2010802-081	2010802-091	2010802-111	2010802-161	2010802-131	-111 ONE EACH PER COMPUTER			2021152-010	LUM 131, REV 9
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2010802-071	2010802-081	2010802-091	2010802-111	2010802-171	2010802-131	-121 ONE EACH PER COMPUTER	APOLLO 13		2021152-011	LUM 131, REV 1
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
N/A	N/A	N/A	N/A	N/A	N/A	-131	CANCELLED		2021152-012	
2010802-251	2010802-261	2010802-271	2010802-281	2010802-291	2010802-311	-141 ONE EACH PER COMPUTER	~~APOLLO 14~~		2021152-013	LUMINARY 173
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2010802-321	2010802-331	2010802-341	2010802-351	2010802-361	2010802-371	-151 ONE EACH PER COMPUTER	APOLLO 14		2021152-014	LUMINARY 178
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

(H) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	E.E. Fisk	3/25/70
CHECKED	[illegible]	3/26/70
APPROVED	[illegible]	MAR 70
APPROVED		
APPROVED MIT		
APPROVED MSC		DATE

COMPUTER PROGRAM ASSEMBLY LUMINARY

CODE IDENT NO. 80730 | SIZE D | DRAWING NO. 2021112

SCALE NONE | SHEET 3 OF 3

2021112 L

REVISIONS TDRR 37/47

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

LUMINARY PROGRAM ASSEMBLY 2021112

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
						ASSEMBLY		EFFECTIVITY		
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV. NO.
2003972-721	2003972-731	2003972-741	2003972-751	2003972-761	2003972-771	-011			2021152-001	69
						ONE EACH PER COMPUTER				
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL MODULES THAT MAKE UP THIS ASSEMBLY ARE TO BE TESTED TO AND MUST MEET THE REQUIREMENTS FOR THE INDIVIDUAL MODULE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	[signature]	27 NOV 68
CHECKED	[signature]	4 DEC 68
APPROVED	[signature]	4 DEC 68
APPROVED	[signature]	4 DEC 68
APPROVED MIT	[signature]	9 DEC 68
APPROVED MSC	[signature]	12/9/68

COMPUTER PROGRAM ASSEMBLY LUMINARY

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 2021112

DATE | SCALE 1/1 | SHEET 1 OF 1

2021112

REVISIONS TDRR 37386					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 37428				
B		REVISED PER TDRR 37453				
C		REVISED PER TDRR 37512				
D		REVISED PER TDRR 37564				
E		REVISED PER TDRR 37742				
F		REVISED PER TDRR 37917				
G		REVISED PER TDRR 37568				

COLOSSUS 2 PROGRAM ASSEMBLY 2021113

MODULE B-1 PART NO.	MODULE B-2 PART NO.	MODULE B-3 PART NO.	MODULE B-4 PART NO.	MODULE B-5 PART NO.	MODULE B-6 PART NO.	PROGRAM SPECIFICATION ASSEMBLY DASH NO.	FUNCTION	EFFECTIVITY LAUNCH PERIOD	EFFECTIVITY MASTER TAPE DECK NO.	EFFECTIVITY PROGRAM REV. NO.
2003972-781	2003972-791	2003972-811	2003972-821	2003972-831	2003972-841	-011 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10&11		2021153-001	COMANCHE 44
2003972-781	2003972-791	2003972-851	2003972-821	2003972-831	2003972-841	-021 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10&11		2021153-002	COMANCHE 45
2003972-861	2003972-871	2003972-881	2003972-891	2003972-911	2003972-921	-031 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10&11		2021153-003	COMANCHE 51
2003972-781	2003972-941	2003972-851	2003972-821	2003972-831	2003972-841	-041 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 10&11		2021153-004	MANCHE 45 REV 2
2003972-861	2003972-1031	2003972-881	2003972-891	2003972-911	2003972-921	-051 ONE EACH PER COMPUTER B-1 B-2 B-3 B-4 B-5 B-6	APOLLO 11		2021153-005	COMANCHE 55

CONTINUED ON SHEET 2

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL MODULES THAT MAKE UP THIS ASSEMBLY ARE TO BE TESTED TO AND MUST MEET THE REQUIREMENTS FOR THE INDIVIDUAL MODULE

QTY REQD	PART OR IDENTIFYING NO	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY | USED ON | APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT INSTRUMENTATION LAB CAMBRIDGE MASS

DRAWN J. Smith 7 FEB 68
CHECKED E. Hahn 7 FEB 68
APPROVED D. C. Cahill 11 APR 68
APPROVED M. Hamilton 11 APR 68
APPROVED MIT 11 APR 68
APPROVED MSC DATE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

COMPUTER PROGRAM ASSEMBLY COLOSSUS 2

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 2021113

SCALE 1/1 | SHEET 1 OF 2

2021113 G

REVISIONS						
SYM	ZONE	DESCRIPTION	BY	CHK	DATE	APPROVED
E		THIS SHEET ADDED PER TDRR 37742				
F		REVISED PER TDRR 37917				
G		REVISED PER TDRR 37968				

COLOSSUS 2 PROGRAM ASSEMBLY 2021113

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
								EFFECTIVITY		
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	LAUNCH PERIOD	MASTER TAPE DECK NO.	PROGRAM REV. NO.
2003972-1081	2003972-1091	2003972-1111	2003972-1121	2003972-1131	2003972-1141	-051	APOLLO 12		2021153-006	COMANCHE 67
						ONE EACH PER COMPUTER				
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2010802-011	2010802-071	2010802-031	2010802-041	2010802-051	2010802-061	-071	APOLLO 13		2021153-007	COMANCHE 72
						ONE EACH PER COMPUTER				
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				
2010802-011	2010802-151	2010802-031	2010802-041	2010802-051	2010802-061	-081	APOLLO 13		2021153-008	MANCHE 72 REV 3
						ONE EACH PER COMPUTER				
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

(E) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTE	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
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FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATL

NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN M Lund 10/5/70
CHECKED J Weber 10/6/70
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COMPUTER PROGRAM ASSEMBLY COLOSSUS 2

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 2021113

SCALE | SHEET 2 OF 2

2021113 G

REVISIONS TDRR 37386

SYM	ZONE	DESCRIPTION	ECR	CHK	DATE	APPROVED

COLOSSUS 2 PROGRAM ASSEMBLY 2021113

MODULE B-1	MODULE B-2	MODULE B-3	MODULE B-4	MODULE B-5	MODULE B-6	PROGRAM SPECIFICATION				
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	ASSEMBLY DASH NO.	FUNCTION	EFFECTIVITY: LAUNCH PERIOD	EFFECTIVITY: MASTER TAPE DECK NO.	EFFECTIVITY: PROGRAM REV. NO.
2003972-781	2003972-791	2003972-311	2003972-821	2003972-831	2003972-841	-011 ONE EACH PER COMPUTER			2021153-001	COMANCHE 44
						B-1				
						B-2				
						B-3				
						B-4				
						B-5				
						B-6				

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
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QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
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MATERIAL

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN		3 FEB 69
CHECKED		3 FEB 69
APPROVED		3 FEB 69
APPROVED		3 FEB 69
APPROVED MIT		14 FEB 69
APPROVED MSC		14 FEB 69

COMPUTER PROGRAM ASSEMBLY COLOSSUS 2

CODE IDENT NO 80230 | SIZE D | DRAWING NO. 2021113

SCALE 1/1 | SHEET 1 OF 1

2021113

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL PART NUMBERS ARE FOR REFERENCE ONLY.
3. DRAWINGS FOR REFERENCE:
   2900076-011 INTERROGATOR, ELEC COMPONENT ASSY
4. UNLESS OTHERWISE SPECIFIED:
   A. VALUES ARE IN OHMS AND MICROFARADS.

REF DES	PART NUMBER	DESCRIPTION	SCHEMATIC DIAGRAM OR VALUE, TOL & RATING
C1	CS13AG100K	CAPACITOR MIL-C-26655/2	
C2	CM20D821J03	MIL-C-5/2	
C3	CP05AIKF103K3	MIL-C-25/1	
C4	CS13AFR47K	MIL-C-26655/2	
C5	CS13AFR47K	MIL-C-26655/2	
C6	CM20D102J03	MIL-C-5/2	
C7	CM20D102J03	MIL-C-5/2	
C8	CM15C390J03	MIL-C-5/1	
C9			
C10			
C11			
C12	CM20D102J03	MIL-C-5/2	
C13	CM20D102J03	MIL-C-5/2	
CR1	IN914	SEMICONDUCTOR, MIL-S-19500/116	
CR2			
CR3			
CR4			
CR5			
CR6			
CR7			
CR8			
CR9			
CR10			
CR11			
CR12			
CR13			
P1	1015956-168	CONNECTOR, ADAPTER	
Q1	1015928-001	TRANSISTOR SPL	2N2193
Q2			
Q3			
Q4			
Q5			
Q6			
Q7			
Q8			
Q9			
R1	RC32GF911J	RESISTOR MIL-R-11/6	
R2	RC07GF683J	RESISTOR MIL-R-11/8	
R3	RC07GF204J	RESISTOR MIL-R-11/8	

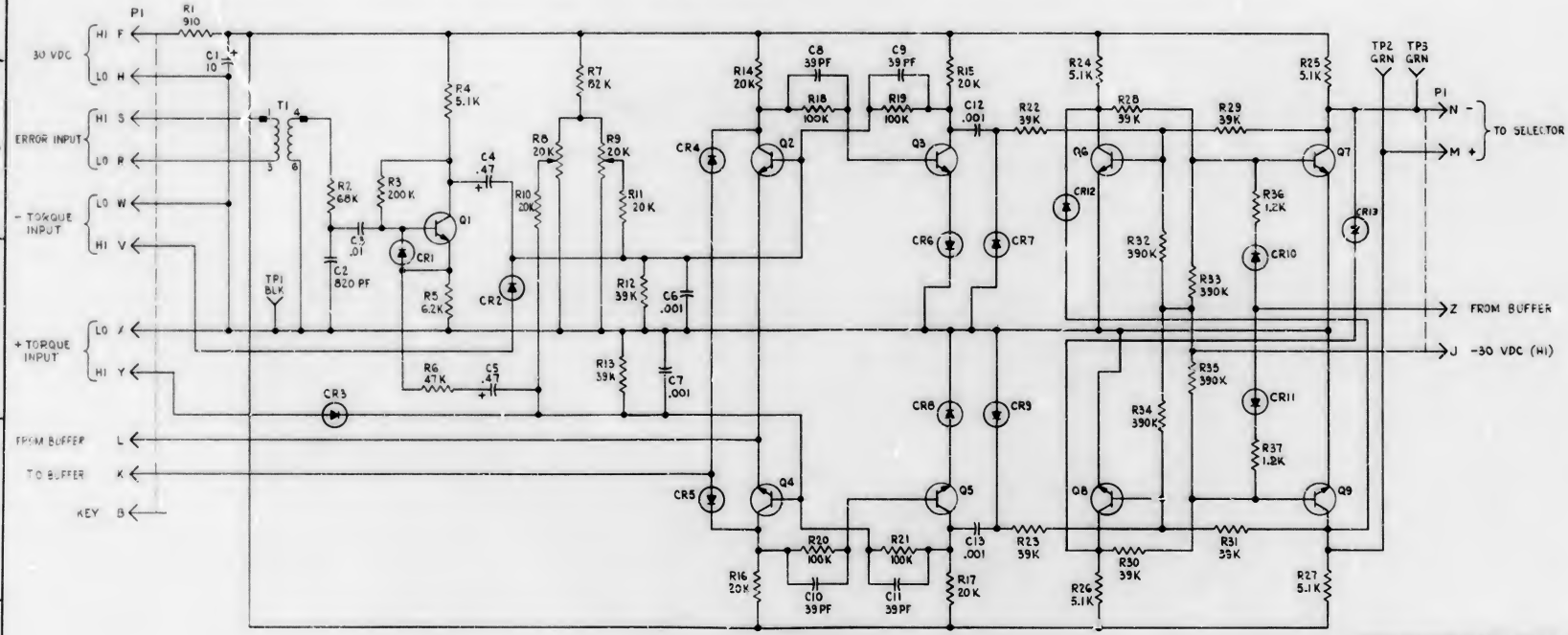
REF DES	PART NUMBER	DESCRIPTION	SCHEMATIC DIAGRAM OR VALUE, TOL & RATING
R4	RC07GF512J	RESISTOR MIL-R-11/8	
R5	RC07GF622J		
R6	RC07GF475J		
R7	RC07GF825J		
R8	RT12C2L203	MIL-R-27208/8	
R9	RT12C2L203	MIL-R-27208/8	
R10	RC07GF203J	MIL-R-11/8	
R11	RC07GF203J		
R12	RC07GF393J		
R13	RC07GF203J		
R14	RC07GF203J		
R15			
R16			
R17			
R18	RC07GF104J		
R19			
R20			
R21			
R22	RC07GF393J		
R23	RC07GF393J		
R24	RC07GF512J		
R25			
R26			
R27			
R28	RC07GF393J		
R29			
R30			
R31			
R32	RC07GF394J		
R33			
R34			
R35			
R36	RC07GF122J		
R37	RC07GF122J		
T1	1015898-017	TRANSFORMER, AUDIO FREQ	
TP1	1016347-003	JACK, MINIATURE	
TP2	1016347-004	JACK, MINIATURE	
TP3	1016347-004	JACK, MINIATURE	

UNUSED TERMINALS

REF DES	TERMINAL NO.
P1	A,C,D,E,P,T,U

REVISIONS

LTR	ZONE	DESCRIPTION	DATE	APPD
A	—	REVISED PER 20-60573	5-5-65	
B		RELEASED PER MAC 2-3-66	2-3-66	
C		INITIAL RELEASE CLASS A PER TDRR 2-8-67	2-8-67	
D		REVISED PER TDRR 2-8-67	2-28-67	



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES	AC SPARK PLUG DIVISION GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	ACSP PN	SCHEMATIC DIAGRAM, ELECTRICAL INTERROGATOR
MATERIAL —	DRAWN C.A.P. 4 MAY 65	
CONTRACT NAS 9-497	CHECKED J. Stein 7 MAY 65	
	APPROVAL	CODE IDENT NO. 99974 SIZE E 2900099
	NASA APPROVAL	SCALE — SHEET OF
	INT APPROVAL	

2900099